The Characterization and Evaluation of Current Asthma Management

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Characterization of asthma management at Fallon Community Health Plan was performed by reviewing automated data files according to the types and amounts of medications used, frequency of office visits and cost. Evaluation of current asthma management was performed by comparing patterns of care with standards proposed recently by the National Asthma Education and Prevention Program and other recent guidelines for asthma care [1–3].

Data were obtained from 12,279 patients with a diagnosis of asthma and plan membership between January 1, 1988 and December 31, 1991. Fallon Community Health Plan had a membership of about 130,000 people during the study period. The prevalence of patients with at least one diagnosis of asthma was approximately 9%. Sufficient data were available to characterize 10,301 patients according to three levels of asthma severity based on a history of hospitalization for asthma in the previous year (severe) or one or more emergency room (ER) visits in the previous year (moderate). Most patients (n = 10,051) were classified as having no ER visit or hospitalization in the past year, while approximately 7% (n = 759) had an ER visit (moderate asthma) and 3% (n = 285) had a hospital admission (severe asthma) at some time during the study. Office visits were frequent, with patients seeing a physician at least every 2 months on average.

The most common forms of therapy for patients in each severity group were β -agonists and theophylline, with short courses of oral corticosteroids in response to acute exacerbations. Maintenance anti-inflammatory medication was less common, even in poorly controlled patients. Following hospitalization for asthma, for instance, inhaled β -agonists were dispensed to 75% of the patients and theophylline to 53%, while inhaled corticosteroids were dispensed to 37% of these patients and cromolyn to 28%. Thus, the predominant therapy was rescue medications in response to symptoms rather than preventive medications.

Several factors point to possibly inadequate maintenance therapy with anti-inflammatory medications. First, recent management guidelines suggest that, in addition to inhaled β -agonists, either cromolyn or inhaled corticosteroids should be used as maintenance therapy even in mild asthma. The use of short courses of oral corticosteroids among patients who do not receive maintenance anti-inflammatory therapy suggests that maintenance therapies consisting solely of bronchodilating medications do not always provide adequate control. In addition, hospitalizations and

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ER admissions among such patients underscore the need for additional maintenance therapy. Finally, β -agonists should be used as needed in response to symptoms, and continuous use of inhaled β -agonists indicates the need for additional maintenance therapy. Among patients whose asthma is poorly controlled, as indicated by hospitalization or ER visit in the past year, oral corticosteroid therapy, or continuous use of a β -agonist by a metered dose inhaler, only 36% (1,331/3,714) used inhaled corticosteroids. Current guidelines suggest that all such patients should be receiving inhaled corticosteroids.

Economic analyses showed that 10% of the population consumes about 42% of the total costs and includes most of the patients with moderate and severe asthma. The major component of costs among expensive patients is hospitalization. This analysis supports the view that reducing hospitalizations in a small number of patients could significantly reduce the total cost of asthma care.

Recent reports suggest that the results reported here apply beyond this population and may represent the way asthma is being managed in much of the United States [4-6]. Anti-inflammatory therapy is only beginning to be introduced as an important component of asthma care. Adopting new guidelines for asthma management, even in a relatively small number of patients with the most severe disease, presents an excellent opportunity to reduce asthma crises and costs of care.

References

National Asthma Education Program Expert Panel Report: Guidelines for the Diagnosis and Management of Asthma. Bethesda, Department of Health and Human Services, 1991. Barnes PJ: A new approach to the treatment of asthma. *N Engl J Med* 1989;321:1517-1527.

McFadden ER, Gilbert IA: Asthma. *N Engl J Med* 1992;327:1928-1937.

Evans R, Mullally DI, Wilson RW, Gergen PJ, Rosenberg HM, Grauman JS, Chevarley FM, Feinleib M: National trends in the morbidity and mortality of asthma in the US. *Chest* 1987; 91(suppl.):65S-70S.

Weiss KB, Gergen PJ, Hodgson TA: An economic evaluation of asthma in the United States. *N Engl J Med* 1992;326:862-866. Marion RJ, Creer TL, Reynolds RVC: Direct and indirect costs associated with the management of childhood asthma. *Ann Allergy* 1985; 54:31-34.