

APPENDIX C:

SUMMARY OF THE GUIDELINES FOR THE DIAGNOSIS AND MANAGEMENT OF ASTHMA

Experts convened by the National Asthma Education and Prevention Program coordinated by the National Heart, Lung and Blood Institute (NHLBI) of the National Institutes of Health (NIH) recently assessed the pertinent scientific literature and offered recommendations for managing asthma. Their report, *Expert Panel Report 2: Guidelines for the Diagnosis and Management of Asthma* updates the first expert panel report published in 1991. It identifies four disease-management strategies and details guidelines for implementation that will keep asthma under control and greatly improve the quality of life for people with the disease. The four strategies include: measures of assessment and monitoring, control of factors contributing to asthma severity, pharmacologic therapy, and education for a partnership in asthma care. These are briefly summarized below. The complete Guidelines are available at www.nhlbi.gov.

Component 1: Measures of Assessment and Monitoring

Initial Assessment and Diagnosis of Asthma

Making the correct diagnosis of asthma is extremely important. Clinical judgment is required because signs and symptoms vary widely from patient to patient as well as within each patient over time. To establish the diagnosis of asthma, the clinician must determine that:

- **Episodic symptoms of airflow obstruction are present.**
- **Airflow obstruction is at least partially reversible**
- **Alternative diagnoses are excluded.**

Asthma severity classifications reflect the clinical manifestations of asthma. They are: mild intermittent, mild persistent, moderate persistent, and severe persistent. The Panel emphasizes that patients at any level of severity can have mild, moderate, or severe exacerbations.

Periodic Assessment and Monitoring

To establish whether the goals of asthma therapy have been achieved, ongoing monitoring and periodic assessment are needed. The goals of asthma therapy are to:

- **Prevent chronic and troublesome symptoms**
- **Maintain (near) normal pulmonary function**
- **Maintain normal activity levels (including exercise and other physical activity)**
- **Prevent recurrent exacerbations of asthma and minimize the need for emergency department visits of hospitalizations**
- **Provide optimal pharmacotherapy (i.e., medication) with minimal or no adverse effects**
- **Meet patients' and families' expectations of and satisfaction with asthma care**

Several types of monitoring are recommended: signs and symptoms, pulmonary function, quality of life/functional status, history of asthma exacerbations, medication, and patient-provider communication and patient satisfaction.

The Panel recommends that patients, especially those with moderate-to-severe persistent asthma or a history of severe exacerbations, be given a written action plan based on signs and symptoms and/or peak expiratory flow. Daily peak flow monitoring is recommended for patients with moderate-to-severe persistent asthma. In addition, the Panel states that any patient who develops severe exacerbations may benefit from peak flow monitoring.

Component 2: Control of Factors Contributing to Asthma Severity

Exposure of sensitive patients to inhalant allergens has been shown to increase airway inflammation, airway hyperresponsiveness, asthma symptoms, need for medication, and death due to asthma. Substantially reducing exposures significantly reduces these outcomes. Environmental tobacco smoke is a major precipitant of asthma symptoms in children, increases symptoms and the need for medications, and reduces lung function in adults. Increased air pollution levels of respirable particulates, ozone, sulfur dioxide and nitrogen dioxide have been reported to precipitate asthma symptoms and increase emergency department visits and hospitalizations for asthma. In addition to irritants (e.g., tobacco smoke and pollutants) and occupational exposures, reducing exposure to allergens may be required for successful long-term management of asthma. Examples of inhalant allergens include: animal allergens, house-dust mites, cockroach allergens, indoor fungi (molds) and outdoor allergens. Other factors that can contribute to asthma severity include rhinitis and sinusitis, gastroesophageal reflux, some medications, and viral respiratory infections.

Component 3: Pharmacologic Therapy

The updated Guidelines offer an extensive discussion of the pharmacologic management of patients at all levels of asthma severity. It is noted that asthma pharmacotherapy should be instituted in conjunction with environmental control measures to factors known to increase the patient's asthma symptoms.

A stepwise approach to pharmacologic therapy is recommended, with the type and amount of medication dictated by asthma severity. The updated Guidelines continue to emphasize that persistent asthma requires daily long-term therapy in addition to appropriate medications to manage the asthma exacerbations. Medications are classified into two general classes: *long-term-control medications* to achieve and maintain control of persistent asthma and *quick-relief medications* to treat symptoms and exacerbations.

Observations into the basic mechanisms of asthma have had a tremendous influence on therapy. Because inflammation is considered an early and persistent component of asthma, therapy for persistent asthma must be directed toward long-term suppression of inflammation. Thus the most effective medications for long-term control are those shown to have anti-inflammatory effects. For example, early intervention with inhaled corticosteroids can improve asthma control and normalize lung function, and preliminary studies suggest that it may prevent irreversible airway injury. The updated guidelines also include discussion of the management of asthma in infants and young children that incorporates recent studies on wheezing in early childhood. Another addition is discussions of long-term-control medications that have become available since 1991.

Component 4:

Education for a Partnership in Asthma Care

Education for an active partnership with patients remains the cornerstone of asthma management and should be carried out by health care providers delivering asthma care. Education should start at the time of asthma diagnosis and be integrated into every step of clinical asthma care. Asthma self-management education should be tailored to the needs of each patient, maintaining a sensitivity to cultural beliefs and practices, and involving family members, particularly for pediatric and elderly patients. New emphasis is placed on evaluating outcomes in terms of patient perceptions of improvement, especially quality of life and the ability to engage in usual activities. Health care providers need to systematically teach and frequently review with patients how to manage and control their asthma. Patients also should be provided with and taught to use a written daily self-management plan and an action plan for exacerbations. It is especially important to give a written action plan to patients with moderate-to-severe persistent asthma or a history of severe exacerbations. Appropriate patients should also receive a daily asthma diary. Adherence should be encouraged by promoting open communication; individualizing, reviewing, and adjusting plans as needed; emphasizing goals and outcomes; and encouraging family involvement.

