

Is it time to revise the asthma guidelines?

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In the United States the National Asthma Education and Prevention Program (NAEPP) was formed by the National Heart, Lung, and Blood Institute and released the first set of US Expert Panel Report's "Guidelines for the diagnosis and management of asthma" in 1991. Since that time, there have been periodic revisions of the asthma guidelines, most recently in 2007.^{1,2} On average, the NAEPP's asthma guidelines are revised every 5 years, and therefore it is about that time to consider an update.

In the September 2011 issue of the *Journal*, we introduced a series of articles to review the current status of asthma and future directions. The first article in this series is an article entitled "Advancing asthma care: the glass is half full!"³ The major point of that review was to highlight significant accomplishments in reducing asthma mortality and morbidity based on hospitalizations and also to indicate ways to further reduce the burden of asthma. The key figure for this article³ is included on the cover of this month's *Journal*.

Usually, the guidelines are revised when there is a major new direction or a new concept that results in a paradigm shift in asthma management along with a significant body of knowledge that affects asthma care. For example, the most recent NAEPP Expert Panel Report-3 emphasized the importance of asthma control, a stepwise approach to asthma management, and early diagnosis and intervention.^{1,2} This version of the asthma

guidelines introduced several new terms that apply to asthma management, specifically assessment of severity, control, responsiveness, impairment, and risk.^{1,2} *Severity* is defined as the intrinsic intensity of the disease process. *Control* is the degree to which the manifestations of asthma are minimized and the goals of therapy are achieved. *Responsiveness* is the ease with which control is achieved by therapy.

NEW INFORMATION THAT COULD PROMPT A GUIDELINES REVISION

Because of the ongoing research and the development of new medications, a fresh set of guidelines can become outdated shortly after publication. It is now time to ask whether the 2007 Expert Panel Report-3 guidelines are due for revision. Several questions accompany that consideration: How should that be done? Is there a need for updating certain areas with new information, or is there a need for a total revision?

Indeed, as summarized in the recent review on advancing asthma care,³ there is new information available that could be incorporated into a revision of the asthma guidelines. For example, we now have information on the use of tiotropium as add-on therapy to inhaled corticosteroids (ICSs),⁴ the role of omalizumab in managing asthma in inner-city children,⁵ and the association of low levels of vitamin D with inadequate asthma control.⁶ We also have new information on managing asthma in children, including the use of biomarkers to select long-term controller therapy,⁷ stepping down ICSs in children with asthma whose symptoms are well controlled on low-dose ICSs,⁸ and stepping up treatment in children whose symptoms are not controlled on low-dose ICSs.⁹ Information is now available on classifying severe asthma based on descriptive terms and on groupings that might be relevant to selecting treatment.^{10,11}

In a recent *Journal* publication, a World Health Organization panel proposed a uniform definition of severe asthma.¹⁰ They recommended that a common international approach is needed to define severe asthma, uncontrolled asthma, and when the 2 coincide. They proposed that severe asthma should include 3 groups, each carrying different public health messages and challenges: (1) untreated severe asthma, (2) difficult-to-treat severe asthma, and (3) treatment-resistant severe asthma. In addition, we have more information developing about the use of ICSs in young children with an evolving pattern of asthma.

In this issue of the *Journal*, Thomas et al¹² review current knowledge regarding step-up and step-down care in asthma management. They introduce 3 new concepts of approach, including (1) step-up long-term, (2) step-up short-term, and (3) step-up intermittent, in an attempt to provide terminology for the various ways that we can adjust asthma therapy. They also identify areas in which more studies are needed to assist clinicians in making decisions around medication adjustment to achieve asthma control. Robin Taylor¹³ provides a review on the use of biomarkers in the assessment of airways disease. He makes the point that the

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successful application of a biomarker result is critically dependent on the specific question being addressed and the performance characteristics of the biomarker in relation to that question in the context of pretest probabilities.¹³ This is an evolving area of knowledge that will change as we have more opportunities to explore the application of biomarkers for disease management, including diagnosis, assessment of disease activity, prediction of treatment response, and monitoring of treatment response.

For example, in the October 2011 issue, Lodge et al¹⁴ reported on their study to determine whether skin prick test responses to individual allergens up to 2 years of age could predict wheeze in children aged 12 years. They concluded that house dust mite sensitization at ages 1 or 2 years in wheezing and eczematous children at increased familial allergy risk might predict asthma and inform management of these high-risk groups. In an accompanying editorial Guy Marks¹⁵ states that improved understanding of exposure-response relationships might be a good starting point; however, we do not quite understand the heterogeneity of this disease presentation. Furthermore, he indicates that latent class analysis and other statistical techniques, together with more comprehensive phenotyping and genotyping information, might help to unravel this heterogeneity and identify particular types of asthma that can be prevented by allergen avoidance interventions.

In regard to asthma surveillance systems, there is also a stronger effort being made to monitor asthma outcomes within provider systems with techniques that could be applied to individual practice centers, as well as large health plans.¹⁶ We will soon have a report from the National Institutes of Health (NIH)'s Asthma Outcomes Task Force that will seek to define outcome measures that can be incorporated into all asthma research funded by the NIH. These task force recommendations will be immediately applied to the conduct of NIH asthma research, but some of these task force recommendations could also be considered for application to clinical care.

There is also the high likelihood that more information will evolve in the coming years on genetics and epigenetics in asthmatic patients, the role of the microbiome, early intervention to prevent asthma, new immunomodulators, and methods to reduce the risk of asthma exacerbations,¹⁷⁻²⁴ to name just a few topics.

MAKING THE DECISION TO MOVE AHEAD

A decision to move ahead will be determined by the National Heart, Lung, and Blood Institute and the NAEPP in regard to the time of and approach to a revision. If the decision is to revise the current guidelines, the expert panel would be reassembled and asked to review the current guidelines. A decision would then be made on whether there is need for a total revision or an update of key areas. At one time, there was a consideration that the guidelines could become a "living document," with ongoing updates as information developed; however, that would require a plan for continuous literature review and ongoing dialogue with the expert panel.

The Expert Panel Report-3 was a full revision, with some major changes in the paradigm for disease assessment, namely the emphasis on control with the measured domains of impairment and risk. Periodic reviews are probably the best way to go, and every 5 years seems to be an appropriate interval to assess the effect of recent publications and re-examine current approaches to management. While awaiting these decisions, clinicians and providers should submit feedback on whether changes should be made to the basic concept of asthma diagnosis and assessment.

This information can be conveyed to the NAEPP or to the current members of the expert panel. Meanwhile, the *Journal* will play its role in publishing key original reports, as well as timely reviews and commentaries, on major topics affecting asthma management.

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