

Presidential address

Allergy care in the next millennium: Guidelines for the specialty

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When the winds of change blow, some build fences while others build windmills. The winds of change are blowing and the specialty of allergy is faced with this dilemma: Should we fight to keep our established health care system and its inherent rewards or should we accommodate to the wind and find rewards in a new health care domain? In my mind, there is little choice. We have to find our way in the changed health care environment, and we must do so both by providing cost-effective care to the millions of patients who have allergic diseases and by establishing ourselves as a referral source in cooperation with both primary care physicians and other specialists. Thus the practice of our specialty must evolve. We must demonstrate our value both in cost savings and in clinical efficacy. We must also maintain or establish our role as appropriate specialists for referral by primary care physicians (PCPs) for consultation in the traditional allergic diseases, including asthma, and for important diseases not previously referred to the allergist, such as sinusitis.

We are a small subspecialty, overlapped by large and powerful groups of physicians who would gladly absorb our patients. At this junction in our evolving relationships with referring physicians and the patients they serve, it is appropriate to define what we can and should do in caring for patients for whom we have special expertise. In this address, guidelines on what the field of allergy and immunology needs to do in order to thrive are presented, along with some of the data that support our success in doing so. Although there are many clinical areas in which allergy is important, this discussion only focuses on the three most important: rhinitis, sinusitis, and asthma. This focus reflects the current and near-future practice patterns and does not discount the potential importance of treating immunologically affected patients, including those with AIDS.

RHINITIS

The traditional clinical focus of the allergist has been the treatment of patients with rhinitis, asthma, urticaria, and other classic allergic diseases, who were often self-referred. As we move to the future, the allergist will

Abbreviation used

PCP: Primary care physician

increasingly act as a consultant to PCPs who act as gatekeepers in a managed care setting committed to reductions in expenditures. There is no doubt that restrictions are and will be placed on the PCP who wants to refer for expert guidance; and allergy, along with every other subspecialty, will receive increasingly more selected referrals.

Referrals that should continue in the new environment include: care of moderate to severe asthma; helping to evaluate and treat patients with chronic or recurrent sinusitis; evaluating and treating patients with difficult-to-treat rhinitis, conjunctivitis, urticaria, angioedema, drug and food allergies, eczema, anaphylaxis (including venom and latex sensitivity), and immunoglobulin deficiencies, along with varied other allergic and immunologic problems, including AIDS for certain practitioners.

Patients with rhinitis referred to the allergist will probably be seen for limited evaluations, and treatments will likely be administered through the PCP's office. Thus immunotherapy, although unquestionably effective in rhinitis management, may be taken out of the allergist's office for what appears to be more cost-accountable management by the PCP.

Let me interject one caveat at this juncture. The PCP, who is frequently paid on a capitated basis, can be required by managed care to provide immunotherapy, but will the PCP also be capable of safely administering this therapy? I doubt that many PCPs or their staffs are equipped to treat the occasional severe anaphylaxis that accompanies properly administered immunotherapy. All allergists have seen the well-managed patient receiving maintenance immunotherapy who has an injection at the onset of a cold and unaccountably has a reaction to the injection. Will the liability for immunotherapy-induced anaphylaxis drive managed care providers to redirect immunotherapy back to the allergist's office? I hope that the decision makers for managed care recognize all sides of this issue (not just the cost savings they may realize in the short term) and allow the experts to continue to provide immunotherapy safely and effectively, as they have for the past 75 years. Experience with general practitioners in the United Kingdom giving allergy immunotherapy was disastrous, with an alarming incidence

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TABLE I. Indications for referral of patients with rhinitis to the consultant and what the consultant should provide to referring physician**Indications for referral**

1. When condition or its treatment is interfering with a patient's performance or causing significant absence from school or work
2. When patient's quality of life is significantly affected
3. When there are complications of rhinitis such as sinusitis, otitis, hearing loss, asthma, significant snoring, loss of sleep, or bronchitis
4. When initial treatments have not adequately resolved the symptoms or additional diagnostic approaches are required, particularly in regard to specifically defining relevant allergens
5. When a patient requires systemic corticosteroids or is experiencing untoward reactions to other therapeutic approaches

What consultant should provide to referring physician

1. Clarification of allergic or other etiologic basis for patient's condition
2. Identification of specific allergens or other triggers for patient's condition and education in ways to limit exposure to these triggers
3. Assistance in developing an effective treatment plan including allergy avoidance, pharmacotherapy, and immunotherapy
4. Provision of specialized services, such as preparation of extracts and immunotherapy
5. Education of patient and referring physician about disease state and therapeutic options

Modified from Joint Task Force on Practice Parameters.⁵

of adverse reactions. We clearly do not want to establish such a pattern in the United States, which might lead to similar problems.

The cost of rhinitis is enormous. It is estimated that 35 million Americans have allergic rhinitis,¹ with hay fever being the most reported chronic condition among teenagers, at a rate of 64.6 per 1000 persons.² In 1990, the medical cost of rhinitis was estimated to exceed \$1.8 billion dollars,³ a cost that is certainly far higher today. The potential cost of lost workdays and impaired productivity may be over \$11 billion—or \$1000 per worker per year.⁴

In the changing health care environment, it is necessary to establish, in cooperation with PCPs, the appropriate circumstances for referral of patients with rhinitis to the allergist and what the PCP should expect the allergist to provide (Table I). It is the special understanding of allergic disease and the ability to apply highly specific management concepts, including a commitment to patient education, that help set our specialty apart. Among these management tools is allergen immunotherapy. As we look to the availability of guidelines for clinical care, it is progressively more essential that every patient receiving immunotherapy be able to pass the scrutiny of quality assurance committees who might review these cases. Thus we need to establish and follow guidelines for immunotherapy (Table II).

TABLE II. Guidelines for allergen immunotherapy

1. All patients receiving immunotherapy should have histories compatible with sensitivity to each allergen considered for treatment.
2. All patients should have significantly positive skin test responses to each allergen considered for treatment. In some studies, a 3 to 4+ skin prick test reaction correlates with allergen sensitivity, whereas intradermal skin test reactions are less reliable. A highly positive RAST (or similar) test result correlates with strongly positive skin test results and may substitute in selected patients (those with severe dermatographism, eczema, need for uninterrupted antihistamine therapy).
3. Attempts at allergen avoidance and pharmacotherapy should be tried before immunotherapy is initiated.
4. Allergens should be prepared in concentrations sufficient to reduce symptoms. Studies to date indicate that final dilutions of allergens at around 1:200 wt/vol or 10 to 20,000 PNU/ml are appropriate. Greater dilutions, although adding degrees of safety, may not have proven efficacy.
5. Allergen mixes should be prepared with an eye to preservation of allergenicity. Thus inclusion of glycerin or human serum albumin to the allergen mix, along with phenol, is generally recommended. Many experts recommend separating mold and dust mite extracts from pollen extracts.
6. Immunotherapy should be re-evaluated after 2 years, or sooner if ineffective, and, if effective, the possibility of stopping at 5 years should be discussed with the patient.
7. Immunotherapy is effective for allergic rhinitis and conjunctivitis, allergic asthma, and stinging insect hypersensitivity. No data support the effectiveness of immunotherapy in food allergy, urticaria, or angioedema. Data on immunotherapy for eczema are conflicting.

Modified from Joint Task Force on Practice Parameters.⁶

Certainly, not all rhinitis is allergic in nature. It requires an expert to distinguish allergic from nonallergic rhinitis and to effectively manage these rhinitis syndromes. It has been said that "Rhinitis is a trivial disease, unless you have it!" The few quality-of-life studies, which have been published, indicate that symptomatic rhinitis may reduce disease-specific quality-of-life parameters by 80% compared with asymptomatic periods.⁷ Thus it would be very unfortunate to restrict evaluation and care of this group of patients for purposes of cost reduction when tried and effective treatment is available.

SINUSITIS

Although it is predictable that there may be a more restricted referral pattern of subjects with rhinitis to the allergist, the opportunity to provide cost-effective medical treatment for patients with sinusitis should more than compensate for this change. Allow me to review some statistics (Table III), which were recently collected by Dr. Peter Gergen of the National Institute of Allergy and Infectious Diseases for a conference held in January 1996 entitled "Sinusitis: Bench to Bedside," which will be published in *The Journal of Allergy and Clinical*

TABLE III. Sinusitis costs

	Number	Estimated cost
Hospital days	143,000	\$220 million
Antibiotics (courses)	12,000,000	\$375 million
Physician visits	11,500,000	\$1.7 billion
Hospital visits	614,000	\$90 million
Surgery	250,000	\$1.2 billion
Total		\$3.5 billion

The incidence of sinusitis is 14.5%, and incidence has increased by 18% over the past 11 years.

Modified from Kaliner et al.⁸

Immunology in the near future.⁸ The general practice today is for the PCP to manage acute, chronic, or recurrent sinusitis and to consult an otolaryngologist if this therapy is not adequate. As an alternative, the allergist, having been trained and certified in internal medicine or pediatrics and being an expert in nasal physiology and pathology, might also be an appropriate consultant for the medical treatment of the patient with sinusitis. All algorithms for the management of sinusitis recommend adequate medical management before any consideration for sinus surgery, although the details defining that course of medical management are not universally defined.

Could an evaluation by an allergist followed by a course of medical management serve a useful purpose in the algorithm for sinusitis? From January to June 1994, 200 consecutive patients evaluated and treated for chronic or recurrent sinusitis at the Institute for Asthma and Allergy were analyzed.⁹⁻¹¹ The results from that study suggest that medical management by the allergist might be effective.

Patients entered into this retrospective analysis either had chronic sinusitis (symptoms persisting for 8 weeks or more) or recurrent disease (two or more sinus infections per year requiring antibiotic treatment for 2 or more years, with current symptoms). The patients were generally adults who had experienced an average of 14.3 years of symptoms before referral to our office (Table IV). Of interest, the most common underlying conditions found to be associated with the development of sinusitis were allergic rhinitis (in 56%) and vasomotor rhinitis (in 23%). Anatomic reasons (significant septal deviation, concha bullosa, Haller's cell) were found in 23% of the patients.

Patients were referred for evaluation either because of asthma (and were found to have concomitant sinusitis as well) or because of sinusitis, cough, headache, or difficult-to-treat rhinitis. Many patients were self-referred from patient-oriented seminars, which were held prior to the analysis. A large number of patients were seeking a second opinion regarding the need for sinus surgery. Because many of the patients sought care for their concomitant asthma, 58% of the subjects with sinusitis studied also had asthma. Aspi-

TABLE IV. Analysis of 200 patients with chronic or recurrent sinusitis

Underlying Cause or associated diseases	Percent
Asthma	58
Allergic rhinitis	56
Vasomotor rhinitis	23
Anatomic abnormality	23
Aspirin sensitivity	10
IgG deficiency (17 of 90 tested)	19
IgA deficiency (7 of 90 tested)	8

The mean age of the patient population was 43 years (range 3 to 80 years).

Mean duration of symptoms was 14.3 years.

Data from McNally et al.,⁹ Kaliner et al.,¹⁰ and McNally et al.¹¹

TABLE V. Symptoms and physical findings in 200 patients with chronic or recurrent sinusitis

Presenting symptoms	
Nasal congestion	73%
Postnasal drip	70%
Purulent rhinorrhea	70%
Headaches	48%
Facial pressure	42%
Anosmia or hyposmia	39%
Cough	38%
Abnormal physical findings	
Abnormal transillumination	68%
Purulent nasal secretions	37%
Mucosal swelling	35%
Polyps	22%

rin sensitivity was found in 10% of the subjects. Surprisingly, 24 of the 90 patients tested were deficient in either IgG or IgA.

As shown in Table V, the symptoms most commonly experienced by the patients were congestion and purulent postnasal drip. Headaches, facial pressure, anosmia, and cough were also seen frequently. Transillumination of the maxillary and frontal sinuses in a completely darkened room was performed routinely in most patients who were evaluated, and abnormalities detected in this examination were the most consistently abnormal physical finding observed, along with purulent nasal secretions, mucosal swelling, and polyps.

Table VI demonstrates the treatment program used. All patients who were allergic were instructed in allergen avoidance, but the short period in which this study was performed made appreciation of the effects of allergen avoidance difficult to determine. The first component of the pharmaceutical treatment plan was an antibiotic, usually either cefuroxime axetil or amoxicillin/clavulanate, most often given for 30 days. Other antibiotics listed were used less than 8% of the time. In addition, nasal and sinus hygiene were addressed by using a

TABLE VI. Analysis of 200 patients with chronic or recurrent sinusitis: Treatments prescribed

Treatment	Patients prescribed (%)
Antibiotics	
Cefuroxime axetil	47
Amoxicillin/clavulanate	20
Other*	<8
Topical decongestant (oxymetazoline)	
Saline nasal lavage	
Nasal corticosteroid	
Dexamethasone	44
Triamcinolone	31
Beclomethasone	26
Budesonide	18
Flunisolide	3
Fluticasone	2

*Other antibiotics prescribed were: clarithromycin, trimethoprim/sulfamethoxazole, loracarbef, amoxicillin, metronidazole, tetracycline, cefaclor, ciprofloxacin, cefixime, and clindamycin.

TABLE VII. Analysis of 200 patients with chronic or recurrent sinusitis: Results in 170 patients evaluated after 1 month

Improvements	Patients experiencing (%)
Symptoms	
Anosmia (54 of 72 patients)	75
Postnasal drip (69 of 119)	58
Headache (41 of 85)	48
Cough (35 of 79)	44
Purulent rhinorrhea (51 of 114)	44
Nasal congestion (47 of 127)	37
Physical findings	
Abnormal secretions (55 of 66)	84
Nasal polyps (31 of 39)	79
Transillumination (16 of 22)	72
Mucosal swelling (42 of 63)	67

topical nasal decongestant, nasal lavage with saline solution, and a topical corticosteroid.¹²

The results of this treatment are shown in Table VII. Despite having had symptoms for many years before this therapy, most subjects experienced both objective and subjective improvements in the various symptoms examined. Between 37% and 75% of patients had subjective improvements, and 67% to 84% had objective improvements. All patients have subsequently received maintenance therapy with nasal corticosteroids, along with appropriate management of their rhinitis and/or asthma. After 12 to 18 months of treatment, only 6% of these 200 patients have required surgery, with 1 serious complication of cerebrospinal fluid leak.

Certain conclusions can be drawn from this study. Medical treatment of chronic or recurrent sinusitis with antibiotics plus topical corticosteroids is effective. After 1 month of therapy, there was subjective and objective

TABLE VIII. Indications for referral of patients with sinusitis to consultant and what consultant should provide to referring physician

Indications for referral

1. When condition or its treatment is interfering with a patient's performance or causing significant absence from school or work on a long-term or recurrent basis or when patient's quality of life is significantly affected
2. When there are complications of sinusitis such as otitis, asthma, or bronchitis
3. When an allergic or immunologic basis for the sinusitis is considered
4. When condition becomes chronic, persists for several months, or recurs 2 to 3 times per year, despite treatment

What consultant should provide to referring physician

1. Clarification of allergic, immunologic, anatomic, or other etiologic basis for patient's condition
2. Identification of specific allergens or other triggers for patient's condition and education in ways to avoid or negate these triggers
3. Assistance in developing an effective treatment plan including allergy avoidance, pharmacotherapy, local nasal hygiene, antiinfectious therapy, and immunotherapy, if appropriate
4. Provision of specialized services such as rhinoscopy, preparation of extracts, and immunotherapy
5. Patient education about causes of sinusitis, early recognition of the disease, and effective methods to attempt to prevent disease progression

Modified from Joint Task Force on Practice Parameters.¹⁴

improvement in most patients. These results were obtained despite the history of symptoms dating back an average of more than 10 years. Six-month follow-up revealed that the pattern established at 1 month generally persisted. All patients have been receiving maintenance therapy consisting of nasal corticosteroids and nasal hygiene with intermittent use of antibiotics. Some patients were started on immunotherapy for underlying allergic rhinitis, but the results of this intervention for sinusitis have not been assessed.

Although this study was not designed for pharmacoeconomic analysis, it does suggest that medical management of chronic or recurrent sinusitis can be cost-effective. Thus it seems appropriate for PCPs to consider consulting an allergist during the treatment algorithm for sinusitis, and certainly before surgery. The Joint Commission of Practice Parameters is developing a parameter on sinusitis, and indications for consultation with an allergist for sinusitis have been developed and are summarized in a modified form in Table VIII.

Close cooperation among the PCP, the otolaryngologist, and the allergist needs to be established or strengthened where it already exists. Medical treatment of sinusitis, including allergic and immunologic approaches, should be offered by the medical provider with the greatest expertise. It is imperative that anyone caring for patients with sinusitis be extremely familiar with internal nasal anatomy and be capable of examining the

TABLE IX. Results of survey of patients with moderate to severe asthma

Population	128 patients with moderate to severe asthma*
Method	Mail survey
No. of respondents	71
Hospitalizations	
No. in previous 12 mo	30
No. in 12 mo under care	9
Percent reduction	70
Estimated savings	\$105,000
Emergency department visits	
No. in previous 12 mo	74
No. in 12 mo under care	29
Percent reduction	62
Estimated savings	\$30,000
Total estimated savings in 12 mo	\$135,000

*Followed up at the Institute for Asthma and Allergy for at least 12 months.

nasal structures with a rhinoscope. This is a relatively easy procedure, and introductions to its use have been provided for many years at national and regional meetings. I recommend that all practitioners caring for patients with sinusitis learn this procedure and that training programs be required to teach this skill.

Sinusitis provides the allergist with a golden opportunity to expand his or her practice with an important, prevalent, and medically underappreciated base of patients for whom the allergist can provide valuable assistance and at the same time strengthen his or her referral relationship with PCPs.

ASTHMA

No one doubts the size of the population affected with asthma or the costs incurred either directly or indirectly. Allergy is by far the most common underlying cause of asthma, and good asthma management should always include allergy assessment and treatment, if appropriate. Several recent studies, done by both allergists and managed care organizations, indicate that management by the allergist is the most cost-effective approach to the treatment of patients with asthma.¹⁴ In our own allergy clinic, we have recently completed a survey of 128 patients with moderate to severe asthma who were followed up at the Institute for Asthma and Allergy for more than 1 year. The first 128 patients with moderate to severe asthma¹⁵ who completed 12 months of care were surveyed by mail in order to compare their needs for emergency department visits and/or hospitalizations in the year before care in our clinic versus the year under our care. The data (Table IX) confirm what others have shown^{16, 17} in regard to the economics of asthma care; that is, comprehensive asthma care by the allergist is cost-effective and reduces the need for costly emergency department or hospital utilization. To help define the circumstances in which patients with asthma should be referred to the asthma specialist, the Joint Commission

TABLE X. Indications for referral to the asthma specialist

1. If diagnosis of asthma is in doubt (e.g., persistent coughing)
2. If patient is losing time from school or work (8 or more days per year), if quality of life is being seriously affected, or if patient is limiting activities (including exercise) because of asthma
3. If the patient requires frequent physician office visits, is hospitalized, or requires an emergency department visit for treatment of asthma; or has moderate to severe asthma
4. If patient has highly labile airway function or frequent exacerbations
5. If patient requires more than 1 canister of inhaled β -agonist per month, high-dose inhaled corticosteroids (>1200 μ g/day), or frequent bursts of oral corticosteroids; or if patient requires daily oral corticosteroids
6. To determine the extent to which allergy plays a role in disease and to initiate allergy management
7. To help define the role of occupational exposure
8. To help manage adverse effects of medications used, to help with complex pharmacotherapy, or to help educate patient about medications

Modified from Joint Task Force on Practice Parameters.¹⁸

TABLE XI. What the referring physician should receive from a consultation on asthma

1. Quantitative definition of severity of asthma
2. Definition of etiologic causes of asthma and clarification of the role that concomitant diseases, which have an impact on asthma care (e.g., sinusitis and gastroesophageal reflux), play in the patient's disease
3. Definition of the role that various triggers including allergens, irritants, and environmental factors play in the patient's disease
4. Specific recommendations for therapy, including allergy avoidance and immunotherapy (if appropriate) and pharmacotherapy
5. Education of the patient about asthma pathophysiology, the mechanisms of action of various therapeutics, and a treatment plan on how to apply such approaches (Peak flow meters, spacers, and emergency treatment plans are important components of an adequate treatment program.)

Modified from Joint Task Force on Practice Parameters.¹⁸

on Practice Parameters Subcommittee on Asthma Management has come out with suggested guidelines (Table X). The services that the allergist and his or her office provide for patients with asthma, which appear to reduce the cost and severity of the disease, include comprehensive attention to the disease itself, as well as the underlying causes (including allergy management); assessment of concomitant conditions (e.g., sinusitis, gastroesophageal reflux, and psychologic problems), initiation of comprehensive allergy, sinus, and asthma management; and attention to education of the patient (Table XI). Of all specialists, allergists prescribe inhaled corticosteroids and peak flow meters the most frequently. It can be claimed that allergists and other asthma specialists have

adopted the principles outlined in the National Institutes of Health asthma education panel recommendations.¹⁵ As outlined in the recent practice parameter on asthma management, which was published in *The Journal of Allergy and Clinical Immunology*,¹⁹ allergists treat all aspects of asthma, not just the airflow obstruction.

CONCLUSIONS

When the current health care environment eventually evolves into a rational system that tries to reduce disease by using proven approaches that are consistent with good medical care, then the current transition period we are in may be remembered as a useful period. However, for those of us working in the current environment, in which profit for shareholders and chief executive officers is being generated by reducing physician autonomy and reimbursements to the breaking point, without consideration of the possible consequences of these actions to patients and their families, this is a difficult and trying time. There are many changes that need to be made to the current system, including consideration of the effectiveness of the "gatekeeper" concept, the relative lack of availability of "point of service" options, the current "pre-existing condition" restrictions, and the disincentives for PCPs to make referrals to subspecialists. Addressing these issues, which are present strictly for financial reasons and not to provide good medical care, might move the current system closer to the concept of providing health insurance rather than using health care needs as a means for corporate profit.

For the specialty of allergy and immunology to survive the current environment, it is essential to look ahead, predict the directions toward which the system will eventually evolve, and move in those directions. Pressure from physicians, patients, and legislators will eventually remove the excess profiteering present in the industry today and replace it with a caring, medically oriented, long-term program designed to benefit both patients and society. Allergists need to continue to provide excellent cost-effective care to patients with asthma, to develop algorithms in which the allergist is the medical consultant to the PCP for the patient with chronic or recurrent sinusitis, and to work with PCPs to develop rational approaches for the treatment of rhinitis. We also need to work closely with other consultants including otolaryngologists, pulmonologists, and a host of others to provide comprehensive medical care of the patient with allergy or asthma.

The winds of change are blowing, and I see the opportunity to expand our care of the patient with asthma, to recruit referrals of patients with sinusitis as

an important part of our patient population, and to hold on to a significant segment of the population with rhinitis. Thus the winds of change should steer us on a successful course through this awkward period in American medical care, and the specialty can flourish.

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REFERENCES

1. Allergic Diseases. National Institutes of Allergy and Infectious Diseases. Bethesda (MD): US Department of Health and Human Services; 1991. NIH Publication 91-3221.
2. Allergic Diseases. National Institutes of Allergy and Infectious Diseases. Bethesda (MD): US Department of Health and Human Services; 1993. NIH Publication 93-493.
3. McMenamin P. Costs of allergic rhinitis in the United States. *Ann Allergy* 1994;73:35-9.
4. Ross RN. Hay fever: a costly disease for American business. In: Diseases management forum: allergy. Boston: Managed Care Communications, Inc, 1995:144.
5. Joint Task Force on Practice Parameters. Practice parameter on allergic rhinitis. *J Allergy Clin Immunol*. In press.
6. Joint Task Force on Practice Parameters. Practice parameters for allergen immunotherapy. *J Allergy Clin Immunol* 1996;98:1001-11.
7. Bousquet J, Bullinger M, Fayol C, Marquis P, Valentin B, Burtin B. Assessment of quality of life in patients with perennial allergic rhinitis with the French version of the SF-36 Health Status Questionnaire. *J Allergy Clin Immunol* 1994;94:182-8.
8. Kaliner MA, Fireman PF, Osguthorpe JD, Aaron J, Georgitis J, Naclerio R, et al. Sinusitis: bench to bedside. *J Allergy Clin Immunol*. In press.
9. McNally PA, White MV, Kaliner MA. Chronic sinusitis in an allergy office [abstract]. *J Allergy Clin Immunol* 1996;97:189.
10. Kaliner MA, McNally PA, White MV. Treatment of chronic sinusitis in an allergy office [abstract]. *J Allergy Clin Immunol* 1996;97:190.
11. McNally PA, White MV, Kaliner MA. Sinusitis in an allergist's office: analysis of 200 consecutive cases. *Allergy Proc*. In press.
12. Kaliner MA, Lemanske RF. Rhinitis and asthma. *JAMA* 1992;268:2807-29.
13. Joint Task Force on Practice Parameters. Practice parameter on sinusitis. *J Allergy Clin Immunol*. In press.
14. American College of Allergy, Asthma and Immunology. The role of the allergist in cost-effective treatment of asthma. Arlington Heights (IL): ACAAI, 1995.
15. Global Initiative for Asthma. National Heart, Lung, and Blood Institute. Bethesda (MD): US Department of Health and Human Services, 1995. NIH Publication 95-3659.
16. Zeigler RS, Heller S, Wald J, Mellon MH, Falkhoff R, Schatz M. Facilitated referral to asthma specialist reduces relapse in asthma emergency room visits. *J Allergy Clin Immunol* 1991;87:1160-8.
17. Steinwachs DM, Wu A, Skinner EA, Campbell D. Asthma patient outcomes project: report on one-year patient follow up. Bloomington (MN): The Health Outcomes Institute, 1995.
18. Joint Task Force on Practice Parameters. Practice parameter on cooperative asthma management. *J Allergy Clin Immunol*. In press.
19. Spector SL, Nicklas RA, Bernstein IL, Blessing-Moore J, Strunk RC, Gutman AA, et al. Practice parameters for the diagnosis and treatment of asthma. *J Allergy Clin Immunol* 1995;96:707-870.