

Current Asthma Management: The Performance Gap and Economic Consequences

Based on a presentation by Stuart Stoloff, MD

Presentation Summary

Despite the availability of effective antiasthmatic drugs, many patients have asthma that is not controlled, as reflected by an increased number of asthma-related hospitalizations and deaths as well as rising costs each year. Failure to achieve adequate control reflects a performance gap and clearly indicates that current asthma management is “missing the mark.”

There are many reasons for this performance gap and its economic consequences, including poor physician adherence to the 1997 asthma treatment guidelines drafted by the National Heart, Lung, and Blood Institute, inadequate patient and physician education, a communication gap between physicians and patients, and the failure to institute appropriate therapy early enough.

Asthma is a chronic disease that affects 17.2 million Americans, or about 6.2% of the population, and is responsible for more than 5000 deaths, approximately 500,000 hospitalizations, 2 million emergency department visits,¹ and \$6 billion in healthcare costs.² Despite the availability of effective antiasthmatic drugs, many asthma patients do not have their disease under control, as reflected by an increased number of asthma-related hospitalizations and deaths as well as rising costs every year. The failure to control asthma adequately reflects a clinical performance gap and clearly indicates that current asthma management is missing the mark. The focus of this article

is to examine the management of asthma, the performance gap, and its economic consequences.

Asthma in Perspective

Mild-intermittent asthma and varying degrees of persistent asthma affect both males and females of all ages and races. Additional demographic data are shown in Table 1. Such data on asthma prevalence suggest that inadequate control of asthma may be the result of inappropriate care.

One example is although 6.2% of the population in the United States has been diagnosed as having asthma, the incidence is more than 7% in Nevada, an area that is not beset by the high humidity or the presence of

numerous perennial allergens that contribute to asthma in other parts of the country.¹ Thus, inappropriate care may account for the disproportionate rate in Nevada, as well as for the increases in asthma-related hospitalizations, deaths, and costs of care across the country.

The key components of asthma care, set forth in the 1997 asthma guidelines drafted by the National Heart, Lung, and Blood Institute (NHLBI), are listed in Table 2. The goals of asthma therapy, also from the NHLBI guidelines, are: no sleep disruption, no missed school or work, no need (or minimal need) for emergency department visits/hospitalizations, normal activity levels, and normal or near-normal lung function.

The choice of both initial and maintenance therapy depends primarily on disease severity, which is determined on the basis of the frequency of daytime and nighttime asthma symptoms (eg, coughing, wheezing, tightness in the chest, or shortness of breath), the nature of disease exacerbations, and lung function (Table 3). Because determination of disease severity helps the clinician select the appropriate pharmacologic therapy, assess the need to modify factors that worsen asthma severity, decide the level of patient education required, and plan for follow-up care, it was one of the cornerstones on which the 1997 NHLBI guidelines were based.

The Performance Gap

There are many reasons why the current management of asthma—despite the availability of effective pharmacologic therapy—is not producing the desired clinical outcomes of adequate control of the disease and the disease process.

Poor Adherence to Guidelines. The reasons that desired outcomes are not achieved may be overconfidence among primary care physicians regarding their ability to manage asthma

and poor adherence to NHLBI guidelines among physicians at all levels of training and specialization. Primary care physicians believe that they comprehensively understand that asthma is a continuum like any other disease, step-down and step-up therapy, and that an asthma patient can be perfectly fine one day but critically ill 24 hours later. However, the overall picture for asthma in terms of clinical outcome suggests otherwise.

An analysis of 51 deaths during a 3-year period in children and adolescents with asthma found that the sudden and dramatic worsening of disease was a greater factor in the

Table 1. Demographics of Patients in the United States With Asthma

<ul style="list-style-type: none"> ■ 17.2 million patients (5 million under the age of 17) ■ 2.2 million African-Americans, 3.5 million Hispanics, 8.9 million whites, 2.6 million other or not noted ■ 43% of adult cases in males, 57% in females, but prevalence is higher in males than in females in pediatric cases ■ 16% have severe-persistent asthma ■ 31% have moderate-persistent asthma ■ 25% have mild-persistent asthma ■ 28% have mild-intermittent asthma
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Source: Reference 1.

Table 2. Key Components of Asthma Care*

<ul style="list-style-type: none"> ■ Diagnosis ■ Assessment and monitoring ■ Factors contributing to asthma severity (previously called environmental triggers) ■ Pharmacologic therapy ■ Education for a partnership in asthma care

*National Heart, Lung, and Blood Institute 1997 guidelines.

deaths than disease severity.³ Approximately one third (35%) of those who died had severe-persistent asthma, as reflected by hospitalizations and frequent emergency department visits; 30% had moderate-persistent asthma, as reflected by frequent emergency department visits but no hospitalizations; and 32% had mild-persistent or even mild-intermittent asthma, with no emergency department visits or hospitalizations.³ These data illustrate that clinicians need to recognize that patients with mild disease are also at risk.

Shortly after the NHLBI released its 1991 guidelines (the set immediately preceding its 1997 guidelines), a database was created to ascertain how many physicians were following the recommendations. The database revealed, for example, that only 5% of primary care physicians used spirometry [Personal communication with NHLBI staff.].

Failure to Meet Treatment Goals. The Asthma in America™ Survey was conducted to assess how well educated patients, physicians, and the pub-

lic were about asthma. The survey also assessed participants' attitudes about and behaviors toward asthma.⁴ Included in the telephone survey were 2509 adults and children with asthma (randomly selected from 42,000 households) and 512 physicians. Approximately two thirds of the asthmatic patients were adults, and one third were children.

Through 30-minute interviews with each asthmatic patient or the patient's parent, the survey revealed that the treatment goals identified in the NHLBI 1997 guidelines were not being met. Significant percentages of those patients had experienced sleep disruption and activity limitations, missed school or work, and had required emergency department care (Table 4). Those occurrences are indications of inadequate disease control.

Communications Gap. The Asthma in America survey also assessed 5 components of care for patients with asthma (Table 5). The responses from patients markedly differed from those of physicians in 4 of these components, indicating a considerable gap

Table 3. NIH/NHLBI Classification of Asthma Severity

Severity	Mild Intermittent	Mild Persistent	Moderate Persistent	Severe Persistent
Frequency of symptoms	≤ 2/wk	> 2/wk < 1/day	Daily	Continual
Exacerbations	Brief/mild	May affect activity	Affects activity	Frequent/severe
Nighttime asthma symptoms	≤ 2/mo	> 2/mo	> 1/wk	Frequent
Lung function				
FEV-1	≥ 80%	≥ 80%	> 60%	≤ 60%
% PEF variability	< 20%	20% - 30%	> 30%	> 30%

FEV-1 = Forced expiratory volume in 1 second; NIH = National Institutes of Health; NHLBI = National Heart, Lung, and Blood Institute; PEF = peak expiratory flow.

between what topics physicians say they cover during an office visit and what patients say physicians discuss. The only component that drew similar responses was the use of an inhaler: 97% of physicians said they demonstrated how to use an inhaler, and 90% of patients said that they were shown how to use it.⁴

A possible perception gap may be compounding the communications gap between patients and physicians. A recent study found that 61% of patients who reported symptoms that met the NHLBI criteria for moderate-persistent asthma and 32% of patients who reported symptoms that met the criteria for severe-persistent asthma considered their asthma to be “well controlled” or “completely controlled.”⁵

Inadequate Education. Another major reason for inadequate asthma control is inadequate education. Many patients do not receive adequate education about asthma, and many physicians, primarily because they are not following the NHLBI 1997 guidelines on this point, do not provide asthma education.

Several educational models have been developed that indicate that approximately 6 months passes between the time the patient receives asthma education to the time the patient actually alters his or her disease management.⁶ The time frame identified by the models is contingent on repetition of the educational information. Thus only educating the patient during the first visit, or during the visit at which the diagnosis of asthma is made, is not sufficient, especially because the overwhelming majority of patients forget about half of the information they have been given within the first hour after a visit to a physician.⁶ It is, therefore, unrealistic to expect that patients will remember everything they learned at the first visit by the time they return for a follow-up visit 2 weeks later. Reeducation is needed during the first

follow-up visit and during as many visits thereafter as is necessary.

The educational models are also based on disease severity. Because patients’ symptoms are continual and exacerbations are frequent, patients with severe-persistent asthma need to be seen and reeducated frequently. Patients with mild or moderate-persistent asthma or mild-intermittent asthma do not need to be seen as often unless their symptoms worsen.

Table 4. Asthma Treatment Goals and Current Performance

Treatment Goal	Current Performance
No sleep disruption	30% of patients surveyed were awakened by breathing problems at least once a week
No missed school/work	49% of children and 25% of adults missed at least 1 day of school or work within the past year because of asthma
No ED visits/hospitalizations	32% of children went to the ED 41% of all patients surveyed sought urgent care at an ED, clinic, or hospital
Normal activity levels	48% limited in sports/recreation 36% limited in normal physical exertion 25% limited in social activities

Source: Reference 4.
ED = emergency department.

Table 5. Patient/Physician Communications Gap*

Component of Care	Affirmative Response Rates	
	Patients	Physicians
Developed written action plan	27%	70%
Prescribed peak flow meter	28%	83%
Given lung function test	35%	70%
Scheduled follow-up visits	55%	92%
Shown inhaler use	90%	97%

Source: Reference 4.
*Base: All patients (unweighted N = 2509); all doctors (unweighted N = 512).

However, they should be instructed to recognize worsening symptoms and to seek care if that happens.

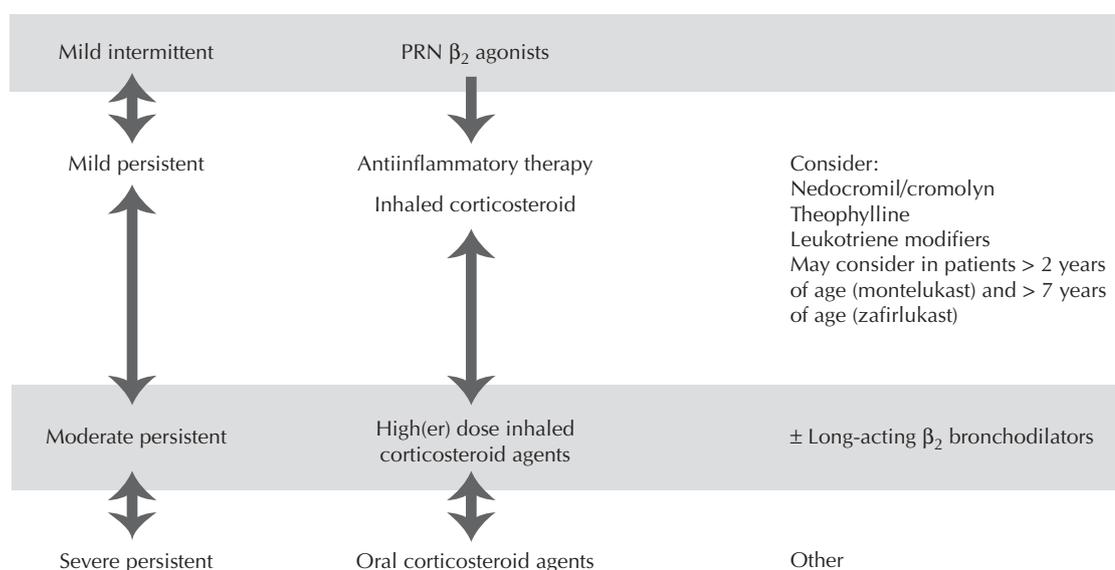
Suboptimal Use of Effective Pharmacotherapy. The pharmacotherapy of asthma may be seen as a continuum that progresses according to disease severity (Figure 1). Patients with mild-intermittent asthma (exercise-induced asthma) are treated with a rescue beta₂ agonist via a canister that delivers 200 puffs of the drug. Patients who require refills more frequently than every other month are taking more than 100 puffs of the medication per month and therefore do not have their asthma under control. They have moved from mild-intermittent disease to mild-persistent disease, which indicates airway inflammation. Those patients should be receiving antiinflammatory therapy as well, preferably with inhaled corticosteroid agents, which

have long been considered the gold standard for mild-, moderate-, or severe-persistent asthma. Alternative therapies for mild-persistent asthma include cromolyn sodium, nedocromil sodium, and methylxanthines. Leukotriene modifiers are an alternative, but they are not considered a preferred therapy.

Because many physicians who treat patients with asthma do not adhere to the NHLBI 1997 guidelines regarding disease severity, the opportunity to use effective antiasthmatic agents optimally is often missed. Thus patients are often undertreated, or their airway inflammation is untreated for too long, and the result is inadequate asthma control.

The HEDIS 2000 Asthma Performance Measure. Practice guidelines, such as those established by the NHLBI, are based on “real world” evidence and/or a consensus

Figure 1. Progression of Pharmacologic Therapy in Asthma According to Disease Severity



PRN = As needed.

among experts and are designed to provide guidance that will positively influence health and economic outcomes. The Health Plan Employer Data and Information Set (HEDIS) 2000 Performance Measure, "Use of Appropriate Medication in Patients with Asthma," is not a set of guidelines. The measure is based on administrative data (ie, prescription refill rates and utilization of medical services) that were used to prepare a risk-stratified approach to classifying and treating asthma. The HEDIS Performance Measure was specifically developed to outline acceptable therapy for plan-evaluation purposes. It is a performance measure based on accountability and is designed to assess minimally acceptable, not optimal, primary therapy for long-term asthma control.

Focusing on minimally acceptable criteria and accountability instead of following practice guidelines or applying both HEDIS 2000 and the NHLBI guidelines in clinical practice may further erode the already inadequate level of asthma control seen in this country.

Health Outcomes and Economic Consequences

Data show that adequate control of asthma results in improved health for patients and more favorable economic outcomes.

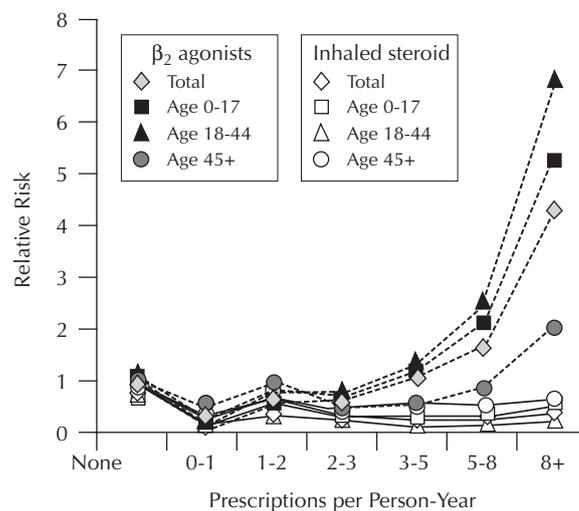
"Real World" Evidence. The use of inhaled corticosteroid agents in Europe preceded the use of those drugs in the United States by several years. One study tracked the use of inhaled corticosteroids in 3 cities in Sweden from 1978 to 1991. During this time, use increased 10-fold to 13-fold.⁷ During that same span of years, Wennergren and associates examined the effects of the use of inhaled corticosteroids on the number of in-hospital days among pediatric and adult asthma patients in those same 3 cities in Sweden.⁸ They found that the number of hospital inpatient days declined

markedly as the use of inhaled corticosteroids increased.

Those findings prompted others to look at the effect of other antiasthmatic drugs on hospital stays. Donahue and associates analyzed pharmacy data for all patients with asthma in the Harvard Pilgrim Health Plan to evaluate the link between therapy and hospitalization.⁹ Looking at the total population as well as at 3 specific age groups, they found that patients with 5 to 8 refills or more than 8 refills of their short-acting rescue inhaler beta₂ agonists had a markedly higher risk for hospitalization than did patients who had 3 to 5 refills or less (Figure 2).

The investigators also assessed the cases of patients who were receiving combination therapy with a beta₂ agonist and an inhaled corticosteroid to see whether the latter controlled

Figure 2. Overuse of Short-Acting Beta₂ Agonists Increases Risk for Hospitalization



Source: Donahue JG, Weiss ST, Livingston JM, Goetsch MA, Greineder DK, Platt R. Inhaled steroids and the risk of hospitalization for asthma. *JAMA* 1997;277:887-891. Reprinted with permission of the American Medical Association.

the patient's asthma long term. As also shown in Figure 2, they found that the relative risk was substantially lower in patients receiving inhaled steroids even if they had 5 to 8 refills of their rescue inhaler.⁹

As recommended in the NHLBI guidelines and the HEDIS 2000 performance measure, the use of short-acting beta agonists is the preferred therapy for patients with mild-intermittent asthma. The preferred therapy for those with mild-persistent asthma is the use of a single long-term controller; for patients with moderate-persistent asthma, the preferred therapy is the use of a moderate dose of an inhaled corticosteroid or 2 long-term controllers; and for those with severe-persistent asthma, the use of multiple long-term controllers is preferred.

Recent pharmacy databank information reveals that the choice of drug therapy for asthma has not changed much from that seen in June 1997 when the NHLBI guidelines were published. At that time, 35% of patients used a short-acting beta agonist only, 48% used one long-term controller, 15% used 2 controllers, and 2% used 3 or more controllers. In March 2000, the corresponding proportions were 31%, 46%, 19%, and 4%.¹⁰ However, there is some positive movement toward more aggressive management of asthma, as reflected by the slight decrease in the sole use of short-acting beta agonists and the small increases in the use of 2 or more long-term controllers.

Economic Outcomes. In 1998, the unadjusted mean charges associated with the use of a single long-term controller (a leukotriene modifier, an inhaled corticosteroid, or theophylline) were \$927, \$637, and \$623, respectively. The unadjusted mean charges for long-term dual-controller therapy with an inhaled corticosteroid plus a leukotriene modifier, theophylline, or the long-acting beta agonist salmeterol were \$1251, \$1125, and \$1124, respectively.

Improved Patient Education. More intensive patient education, such as a comprehensive asthma education program, can have a positive effect on reducing the costs of asthma care. One such program has been developed for patients residing in northern Nevada. Underwritten by a hospital in the region, the program consists of four 45-minute visits with a respiratory therapist who provides education that is consistent with the NHLBI 1997 guidelines. The program, which is available free of charge, is available to patients 7 days a week until 10 PM. A physician need only call a local number and the patient is contacted to schedule his or her first visit. Surprisingly, very few physicians refer patients to the program, even though the majority of physicians in the area know of the program's existence.

An important pattern that has clinical as well as economic ramifications has emerged: the incidence of emergency department visits has decreased dramatically among patients who have been referred to the program, whereas the incidence has not changed among patients who have not been referred.

Summary

A performance gap in asthma care exists, as reflected by inadequate control of asthma and failure to achieve treatment goals, discrepancies in communication between patients and physicians, and discrepancies between HEDIS performance measures and the NHLBI guidelines. However, there are many opportunities to improve clinical, economic, and humanistic outcomes.

Actions that would improve outcomes include increased attention to classifications of disease severity to help determine optimal drugs to improve control of the disease, increased use of lung function tests so that physicians can better tailor ther-

apy to pathophysiology, increased adherence to the NHLBI 1997 guidelines, and improved patient education.

... DISCUSSION HIGHLIGHTS ...

Beneficial Effects and Dosing

Dr. Fornataro: How long does a patient with moderate-persistent asthma have to be on an inhaled corticosteroid before you start seeing the full antiinflammatory effect? I assume you're going to increase the dose of the inhaled corticosteroid when the patient goes from mild-persistent to moderate-persistent asthma. I'm asking about patients with moderate-persistent asthma who are on an inhaled antiinflammatory agent. When do you decide to add a long-acting beta agonist? Do you increase the inhaled corticosteroid dose a bit more and see what effect it will have, or do you immediately add the long-acting beta agonist?

Dr. Stoloff: Those are important questions, and there are answers. A recently published report described a study that compared the antiinflammatory agent budesonide (400 µg twice a day) with 100 µg budesonide plus the long-acting beta₂ agonist salmeterol.¹¹ Looking at markers for induced sputum, the investigators found no difference between the 2 regimens. This refutes the long-held assumption that high doses of inhaled corticosteroids are needed to provide benefit.

It's also important to define what you are measuring as a benefit. Are you measuring symptom-free days, the presence or absence of symptoms, or lung function? A review of 1600 patients treated with fluticasone found that symptoms were relieved during the first day of treatment. Yet it took 3 weeks for a 90% improvement in lung function, as measured by FEV-1 [forced expiratory volume in 1 second] or peak respiratory flow, and

about 2 weeks for a 90% improvement in symptom control.¹²

It is the lower doses of inhaled corticosteroid that yield the greatest improvement in lung function. If you go from zero to about 400 to 800 µg, and you look at the curve for improvement in lung function, the greatest improvement on that curve occurs at the low end. Therefore, when you double the dose from 200 to 400 µg, there is a much greater improvement than when you double the dose from 800 to 1600 µg. This permits you to use a much lower dose of inhaled corticosteroid when you are combining it with another agent, such as a long-acting bronchodilator, without masking the antiinflammatory benefit of the steroid, even when you measure lung function.

About 5% of patients with asthma do not respond to steroid therapy. For the 95% of asthmatic patients who do respond, you don't need that much medication when you use the correct drugs. If your patient has moderate-persistent asthma at the time of diagnosis, your choices are to give a moderate or moderate-to-high dose of an inhaled corticosteroid, or a low-to-moderate dose of an inhaled corticosteroid combined with a long-acting bronchodilator.

NHLBI Guidelines and Patient Education

Dr. Belman: What proportion of the residents and medical students you teach adhere to the NHLBI guidelines in the clinic?

Dr. Stoloff: I would estimate about 25%, although I have not asked. I'm basing this on the charts of the cases being presented.

Dr. Turk: I think it's about 25% in major medical centers, and I'd like to ask why it is so low. We've had the guidelines for 9 years, we've had innu-

merable lectures and national programs, and yet we see physicians in training and physicians already in practice who haven't read them, or if they've read them, don't use them.

Dr. Creticos: We presented an abstract at the World Asthma Meeting in Barcelona in 1998 in which we reported that the concordance of actual prescribed therapy with recommended interventional step-care guidelines was less than 40%.

Dr. Stoloff: I'm generalizing, but most physicians say following the guidelines is too much to do and there isn't enough time. My explanation is that it doesn't take that much time. It takes 45 minutes to an hour during the first visit because that is when patient education has to begin. We really do have to educate patients about asthma.

One of my major roles in drafting the guidelines was coauthoring the section on education. The need for self management—for becoming your own doctor—is huge among asthma patients, just as it is in patients with diabetes. Patients with either of those diseases really have to assume responsibility for their own care, and I want to get patients to buy in to that approach of management as early as possible. Another stumbling block that I hear from students is that there is so much to learn, so little time, and so many patients to see.

There is also a tremendous lack of understanding regarding inhaled corticosteroids and the differences among them, as well as how to use a metered-dose inhaler or a spacer.

Dr. Belman: Don't you think your students' point about there not being enough time is a valid one? In addition to asthma, there are many other diseases that require counseling, for example hypertension, diabetes, coronary artery disease, lipid levels, preventive care, and menopause.

Dr. Stoloff: I'm still a family doctor and I know how difficult it is when a patient comes in, asks for renewals of several medications, and then wants to talk about some recent medical problem. You begin to think about time, the patients in your waiting room, and the phone calls you're going to get. That is clinical practice, and you simply have to devise a process that allows you to see your patients for an adequate amount of time, especially those with asthma, because you can make a significant impact on outcomes if you spend the time on patient education.

At present, there is no way around the time dilemma; either you refer your asthma patients to an asthma specialist who is willing to take the time, or you provide the time. You can't shortchange the patient with this disease. You cannot simply say, "Here, just read this pamphlet; it will teach you everything you need to know." We know from educational models that we have to take the time to educate our asthma patients and work with them.

In my office, the nurse does the majority of the patient education. We also get the patients into an asthma education program.

Dr. Stempel: One of the major failings of the medical community is in *not* recognizing the importance of this up-front investment of time. The medical industry recognizes how important it is by redesigning products and developing better products. We need to think about redesigning how we manage our time because, in the long run, we too are going to come out with a better "product"—namely, healthier patients—and it's going to be more cost effective. We're going to see that the investment in education is going to keep asthma patients out of the hospital and out of the emergency department.

That's also true for many other illnesses. We know that if diabetics get

an annual eye examination and regular foot care, it is much easier to identify potential problems and avert complications, and that will probably decrease costs over the long term. To see whether we can do that in asthma care as well, we have to devise some means within the present healthcare structure to be able to afford enough interactive time with the patient to explain what needs to be done. There are potential cost savings and certainly great health benefits.

Dr. Creticos: Indeed, we can learn a lot from diabetes management with respect to asthma care. Just as the patient with diabetes adjusts his or her insulin dosage every day on the basis of a fingerstick blood glucose test, we need to teach our asthma patients to make appropriate daily adjustments in their asthma medication dosage on the basis of symptoms, peak flow, and rescue medication use.

Disease Management Programs

Dr. Turk: Which disease management program is most helpful in the care of asthma patients?

Dr. Walters: We have found that it is better to schedule a patient for a 45-minute first visit, and take the time right then when you've got a captive audience rather than to set up group or individual asthma sessions at a later date because patients are strapped for time too. They may be concerned enough to focus on educational efforts only after they have had an acute attack, but not beforehand.

Dr. Turk: Dr. Belman, what were the outcome parameters for your study of disease management in a PPO [preferred provider organization] market?

Dr. Belman: They were emergency department visits, hospital admis-

sions, and a quality-of-life instrument. All 3 improved significantly.

Dr. Gillam: Part of the problem with disease-state management programs that are administered by health plans is that there are misaligned incentives. Does the provider run the program? Does the plan run the

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—David A. Stempel, MD

program? Do you let the pharmaceutical company run the program? Until program organizers align those incentives and set up a feedback loop among the organizations, I'm not sure whether these programs will ever have a major impact.

Dr. Turk: Aligned incentives are crucial. Dr. Belman, you have been running a teaching program since the NHLBI guidelines were published. Were you using the guidelines as an integral part of teaching asthma management at Cedars-Sinai?

Dr. Belman: The guidelines are the basis, but we're also putting together a practice tool that we will eventually circulate.

We have another intervention that we started about 3 years ago. Each quarter, we identify any member who is getting 3 or more beta agonists in a 6-month period without a controller prescription. The prescribing physician then gets a letter saying these are patients who may benefit from controller medication, along with a list of patients who are on a controller and those who are not. As a result of this

intervention, we've seen an increase from about 35% on a controller to close to 50%.

Dr. Eisenberg: That's what I would expect to hear about an asthma disease management program. Why then aren't some programs successful?

Dr. Turk: Lack of physician buy-in is the greatest factor I can point to. Remedial disease management programs usually involve physician-written communication that say essentially, "We have identified that your patient is taking excessive short-acting beta agonists. Why isn't he receiving inhaled steroids?" The communication includes 3 or 4 check-offs, including "Patient doesn't have asthma and doesn't need inhaled corticosteroids," "Exercise bronchospasm only," and "Other." In my experience, the item that is most frequently checked off is "Other." Although other reasons are possible, the frequency of a nonspecific response to disease management follow-up questionnaires suggests that some providers do not pay any more attention to the remedial aspect of asthma education than they did to the original teaching exposures.

Clinical Practice Issues

Dr. Creticos: There are several issues regarding patient/clinician communication. Did the patient really understand the instructions? Did the physician have the time to go over the treatment plan? Did the prescriptions actually get filled?

With more and more volume of patients, clinicians cannot spend the time they did in the past with these patients to really feel that they are giving them hands-on care, and that's the case for subspecialists as well as for primary care physicians. Volume requirements have had a major

impact in the private practice setting as well as in the academic sphere.

As a specialist, though, I have noticed something else that presents a challenge to managing patients with asthma. I will have patients return for their 4-month follow-up visit. At that time, I review with them their written treatment plan. But when they bring their medicines, I learn they are not using the medication that I originally prescribed. What often happens is that these patients' primary care doctor changed the medications because they weren't approved by the patients' plan. Now, the patients are confused, frustrated, and oftentimes incorrectly treated. I call this the "corporatization effect" of medicine.

Dr. Walters: I think there is one other basic factor, and that is that physicians tend to practice the same way they were practicing when they graduated from medical school. If you start throwing new information to physicians with very busy practices, how much of it will they grasp in light of the tried and true methods they learned in medical school?

Dr. Richard Krugman, who is the dean of the medical school at the University of Colorado here in Denver, says that it takes 10 years to change the medical training and the actual practice techniques of physicians from the time they graduate from medical school until they enter clinical practice, and until they finally get "into the groove." If we've got that 10-year lag, we're looking at a 5-year span right now in the training of those physicians today and another 5 years to get them into practice. By that time, they're going to be behind just like all the rest of us are.

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