How to Improve Outcomes in a Patient Population of Asthmatics

Gary Owens, MD

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Summary

Management of an asthmatic population to achieve the best outcomes is difficult and complex. Current strategies are likely to be ineffective. Plans need to re-evaluate their current asthma management programs to identify areas for improvements. A successful asthma management program requires consideration of all stakeholders and a multifaceted, and in some cases, individualized approach.

Key Points

- Managing a population of asthmatics is a complex issue for providers, patients, and plans.
- There is no simple solution to the management of this disease, so plans must use all of the resources at their disposal.
- Good asthma management involves the input and understanding of all the needs of the stakeholders.
- Good asthma outcomes may not be possible without increasing cost.
- Medication adherence is a key to long-term disease control.
- Resources must be used wisely, with no waste on unnecessary care or withholding of resources that can lead to better outcomes.

WORLDWIDE, MORE THAN 300 MILLION people have asthma. In the United States, it is estimated that there are 20 million asthmatics.[1] This figure includes 6.2 million children and 13.8 million adults. Overall, the prevalence of asthma is 8.5 percent in children and 6.7 percent in adults.

Asthma can be a fatal disease. Asthma death rates from 2000 to 2004 were more than 4,000 per year.[1] About half of the asthma related deaths occurred in persons over 65. Two hundred were in children under 18. The majority of these deaths could have been prevented.

Costs of asthma depend on severity of disease and extent of exacerbations and control. Annual asthma costs are estimated at $9.4 billion in direct medical costs and $4.6 billion in additional cost.[1] Of the medical cost, 50 percent is for rescue or emergency treatment and 33 percent is for medication. For the three years, 2001 to 2003, there were 12.3 million office visits, 1.3 million hospital outpatient visits, 1.8 million emergency room visits, and 504,000 hospital discharges related to asthma.[1] It is assumed that disease control will reduce medical visits and costs.

In the pathophysiology of asthma, airway inflammation leads to airway hyper-responsiveness, obstruction, and in some cases chronic structural changes. As for the risk factors for developing asthma, there is significant association with allergy and atopy. Genetic predisposition also is a factor. There are five distinct phenotypes of this disease—intermittent, persistent, exercise-associated, aspirin sensitive, and severe persistent.

Environmental factors can exacerbate the disease and may contribute to the rising rates of asthma. These include dust mites, tobacco smoke, air pollution, occupational exposure, and excess weight. The role of animal dander, unless there is documented allergy, is controversial.

Patient history is one of the most important diagnostic factors. Cough, especially nocturnal; wheezing and difficulty breathing; and symptoms that occur or worsen at night are classic symptoms. Nasopharyngeobronchial reflux, the postnasal drainage of inflammatory cells, can contribute to asthma. Chronic nasal congestion can lead to mouth breathing, which allows unfiltered air into the lungs. Cy-

Exhibit: 1 Integration of All Stakeholders: Successful Asthma Management

tokines released by inflamed sinus tissue contribute to the inflammatory process. In the diagnosis of asthma, physical findings may be variable or even non-existent.

Diagnostic tests for asthma may be indicated. Asthma is suspected if peak expiratory flow increases more than 20 percent after use of a short acting bronchodilator but peak flow measures only large airway function. Spirometry, which measures large and small airway function, is recommended over peak flow for diagnostic purposes.[2] Impairment of lung function as determined by spirometry is important to determine classification of risk and severity.[2]

According to the National Asthma Education and Prevention Program (NAEPP) 2007 guidelines, asthma classification of severity is based on a combination of spirometry, symptoms, nighttime awakenings, use of rescue medications (short acting ß agonists), and history of exacerbations requiring oral steroids.[2] At present, there are inadequate data to correspond frequency of exacerbations with severity so the requirement of steroid use is used as a marker of a severe exacerbation. A problem with management of asthma is doing this guideline-based process in a brief office visit.

Asthma treatment is a stepwise approach, which is meant to assist, not replace, clinical decision-making. Once the severity level of the patient is determined, the guidelines recommend a specific treatment level. Treatment needs to be reassessed in two to six weeks to evaluate level of control and adjust therapy accordingly. Control is assessed using a similar process to assessing severity. Before stepping up medications, adherence to medications, inhaler technique, changes in environmental issues, and comorbidities should be evaluated.

As evidenced by the length of the NAEPP guidelines, the management of asthma is complex. Management of asthma requires the interaction of a number of factors. These include patient education and adherence, consideration of environmental and other risk factors, and physician diagnosis and monitoring of the disease according to precise guidelines. Other considerations include medication adjustments based on careful evaluation and adherence to the guidelines, patient long-term adherence with appropriate medications, caregiver understanding and compliance with routines, pharmacy management and education, and close follow-up and ongoing monitoring. To manage asthma adequately, a health plan in cooperation with the provider(s) and the patient will need to deal with all these aspects of care for successful asthma management. There needs to be both patient and provider buy-in. One important key to success is coordinating all of the various activities in the plan to be sure that there is alignment of all activities.

Care coordination with the patient requires using the combined efforts of the plan's population management programs, case managers, medication therapy management programs and provider to develop a comprehensive management strategy (Exhibit 1). This strategy needs to be simultaneously a population-based strategy and an individualized strategy. There is no one-size-fits-all program for asthma

Exhibit 2: Managing Asthma Medications

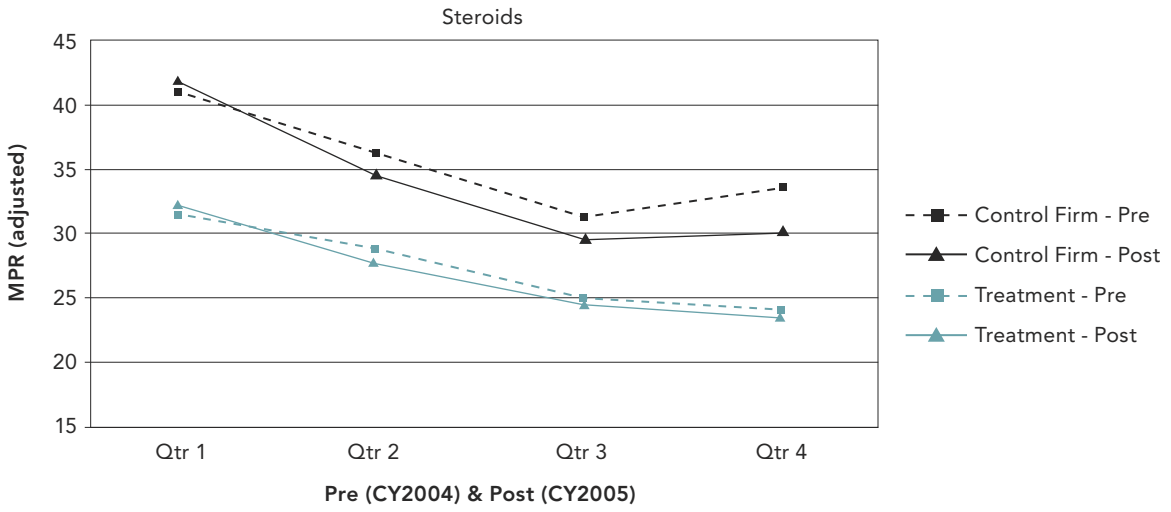
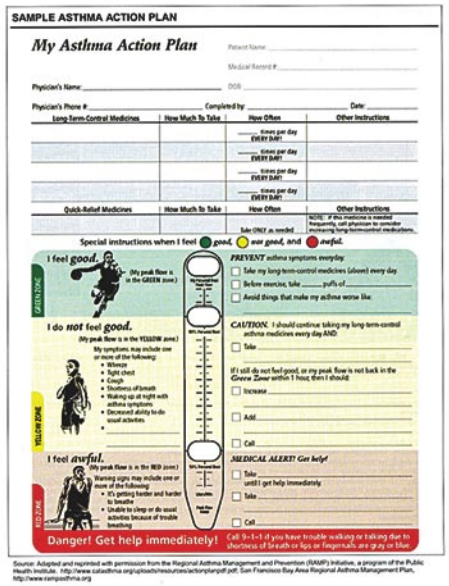


Exhibit 3: Sample Asthma Action Plan



management. There needs to be a fair amount of individualization. Care coordination requires continued effective communications about asthma risks, environmental risks, and medication adherence. The effectiveness of these communications should be monitored.

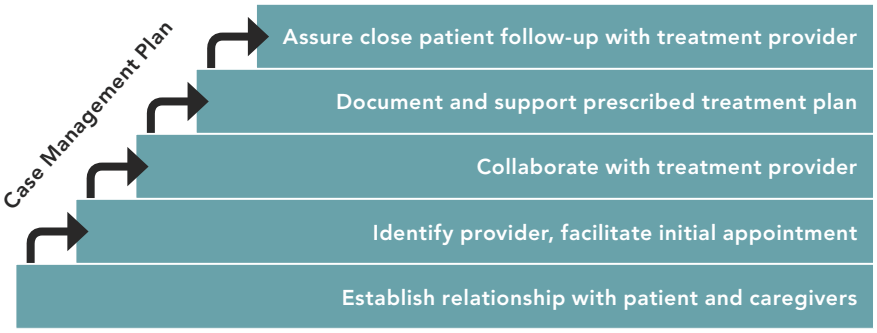
Surveys of a plan's asthma population should be developed to identify needs, gaps in knowledge, and gaps in care. Identifying these barriers to good asthma care is essential. Some common barriers to care include financial issues (e.g., co-payments and co-insurances), distance to providers, availability of providers—both primary and specialty, knowledge barriers, understanding of the significance of the disease, understanding when the risk increases, and provider understanding of proper care needs for the patient.

Maintaining adherence with medications for asthma is among the most difficult of all chronic conditions. Typical medication possession rates in asthma are well below those in other chronic diseases. There are many reasons for lack of adherence in asthma. Some of the major reasons include lack of knowledge about the severity of asthma, lack of expectations from treatment, concern about medication side effects, underestimation of symptom severity, lack of enthusiasm in taking control of one's health, need for autonomy, failure of the system to develop patient self-regulation skills, failure to remember or understand the treatment plan, and cost issues. It is tempting to look for simple solutions such as disease management programs or eliminating financial barriers. Some of these solutions have gotten a good deal of popular press.

The reality is that adherence is not that simple. Population based strategies, elimination of financial barriers, managing side effects, education of patients, or education of providers each used alone are not the sole answer to the problem. Exhibit 2 illustrates how the reduction of co-payments alone did not significantly improve asthma medication possession rates in one study.[3] Tackling the issue of low adherence in this disease requires a multifaceted and individualized approach.

Understanding the variability of the disease and focusing on control is important in managing compliance. Better ways to disseminate and get "buy in" on the NAEPP guidelines is needed. One problem is the relative complexity of the guidelines. Plans need

Exhibit 4: Case Management Strategy



ways to assist providers with managing patients according to the guidelines. Asthma must be treated as an inflammatory disease. Providers must be taught to identify and address patient needs. Providers must be taught to provide adequate, guideline-based therapy. They need to look for associated complications.

Reassessment of current population-based strategies is essential. Plans should consider changing their focus from disease control, which may be too elusive, to a focus on disease modification and disease prevention through appropriate allergy care, environmental controls, and understanding of individual's role in care planning and management.

The strategies health plans are currently using are not likely effective. Each plan needs to assess what it is doing, its effectiveness, and which components should be continued. To achieve successful asthma management, plans must use all of the resources at their disposal. They cannot rely totally on population-based strategies, consumer engagement, or a one-size-fits-all approach. Some patients will need targeted intervention. The trick is to identify which ones and how to be cost-effective in the use of resources.

All patients with more than intermittent disease will benefit from having an asthma action plan (Exhibit 3). This plan is individually focused and developed. It allows a comprehensive review of the medications, allows autonomy at the patient level for some decisions, and gives a structure for managing symptoms. The plan stresses the severity of the disease and the need for rapid intervention.

Selected use of case management resources is important to success (Exhibit 4). Those patients with the most needs and who are likely to derive the most benefit from case management should be systematically identified. This is not easy because there is no simple outline for how to do this.

Plans may have difficulty demonstrating return on investment with asthma management programs. It may be time to stop looking for the return on investment and focus on outcomes and value. We simply don't know whether better management of asthma will ultimately save money. Better management of asthma will produce better clinical outcomes and will likely increase medication costs.

Conclusion

Managing a population of asthmatics is a complex issue for providers, patients, and plans. There is no simple solution to the management of this disease. A one-size-fits-all approach is not likely to be effective. Good asthma management involves the input and understanding of all the needs of the stakeholders. Good asthma outcomes may not be possible without increasing cost.

The key is to use the resources available wisely without wasting resources on unnecessary care, or withholding resources that can lead to better outcomes. **JMCM**

Gary Owens, MD, is President of Gary Owens Associates.

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