Pulling Together Against Asthma

Fewer Missed Days, Lower Medical Costs

52% of Employers Now Have Asthma Management Programs
Assessing Asthma’s Impact

Because asthma’s effect on the workplace is profound, it is heartening that increasingly, employers are taking necessary steps to address the 20.3 million Americans with the condition.

Human resources executives see where this is heading. They understand that employees with asthma cannot always come to work and cannot always do their best when they are at work. They understand that parents sometimes have to take time off from the job to stay home with a child undergoing a prolonged attack. They may even have to rush to the emergency department.

Some of the expense can be tallied: lost productivity from the worker, a depleted workforce, disruption of the work environment, and increased health care premiums.

Much of this can be avoided. If ever there was a condition that can be effectively managed through employee education and a well designed health benefit, it’s asthma. Pitney Bowes, to take just one example, offered workshops and overhauled its pharmacy program, reducing emergency room visits for asthma attacks by 6 percent and hospital admissions for asthma by 38 percent for its 35,000 employees.

HR executives take note: Innovative approaches for getting employees to participate in asthma programs that coincide with what health insurers are doing need to be devised and undertaken. As the article “Proactive Employers Can Reduce Asthma’s Effect on Their Operations” (page 16) points out, the programs are extremely cost-effective, saving employers $3 for every $1 invested, in some cases.

This publication is divided into four parts: The first part describes the effect of untreated asthma on workplace productivity; the second tracks the evolution of therapy and shows how contemporary therapies have been shown to reduce illness and comorbidities; the third is a summary of asthma initiatives by major accrediting bodies (e.g., the National Committee for Quality Assurance); and the last (by no means the least) looks at employer strategies.

Disease management is a term long associated with asthma, and one that’s invoked in this publication. Concerted efforts to treat asthma go beyond DM, however. We’re talking about lifestyle enhancement on the personal level, which translates into greater morale and productivity in the workplace. The result is a win-win for everybody.
INTRODUCTION

Assessing Asthma’s Impact
Through employee education and disease management, asthma’s effects can be minimized. Here’s what employers can do.

Inadequate Adherence Top Impediment To Effective Control
Insurers report that failure to take the correct medication at the correct time is the biggest reason for poor control.

This Common Disease Costs Employers Billions of Dollars Each Year
Staggering numbers: 20 million Americans affected; $18 billion in direct and indirect costs.

Medications Have Improved Markedly
Several classes of medications are available to address asthma, from the mild to severe cases.

Accrediting Bodies Provide Guidance For Choosing Asthma DM Programs
Purchasers and employers can have some confidence in DM programs that have been reviewed by the NCQA, URAC, and JCAHO.

Proactive Employers Can Reduce Asthma’s Effect on Their Operations
Employers’ concerted efforts — in and out of the workplace — can improve outcomes, reduce costs, and help employees live healthier lives.

Action Items
Briefly, six of many areas where employers can see results.
Insurers rate factors they believe are getting in the way of better outcomes for asthma

<table>
<thead>
<tr>
<th>Factor</th>
<th>Extensively Impedes Asthma Care</th>
<th>Somewhat Impedes Asthma Care</th>
</tr>
</thead>
<tbody>
<tr>
<td>Member noncompliance with asthma treatment</td>
<td>48%</td>
<td>52%</td>
</tr>
<tr>
<td>Member inappropriate use of medications</td>
<td>60%</td>
<td>37%</td>
</tr>
<tr>
<td>Member need to take multiple medications</td>
<td>67%</td>
<td>30%</td>
</tr>
<tr>
<td>Variability of the disease within an individual</td>
<td>65%</td>
<td>30%</td>
</tr>
<tr>
<td>Member psychosocial issues</td>
<td>67%</td>
<td>27%</td>
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<tr>
<td>Individual member response to asthma medications</td>
<td>77%</td>
<td>12%</td>
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<tr>
<td>Member literacy level</td>
<td>72%</td>
<td>14%</td>
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<tr>
<td>Multicultural issues</td>
<td>78%</td>
<td>8%</td>
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<tr>
<td>Lack of provider awareness of the NHLBI guidelines for asthma</td>
<td>65%</td>
<td>19%</td>
</tr>
<tr>
<td>Financial and nonfinancial resource limitations</td>
<td>64%</td>
<td>18%</td>
</tr>
<tr>
<td>Inability of providers to follow up with patients</td>
<td>61%</td>
<td>14%</td>
</tr>
<tr>
<td>Information technology limitations</td>
<td>54%</td>
<td>5%</td>
</tr>
<tr>
<td>Cost of the program for member, for asthma-related services</td>
<td>42%</td>
<td>13%</td>
</tr>
<tr>
<td>Plan inability to identify members with asthma</td>
<td>30%</td>
<td>4%</td>
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A Largely Avoidable Drain On Company Resources

America’s total asthma bill runs to $18 billion each year, and businesses are profoundly affected by direct cost and workplace inefficiency

**EXTENT OF THE PROBLEM**

Although asthma afflicts around 20 million Americans and accounts for 15 million missed or lost workdays, experts say that proper control could greatly reduce that impact. Nearly all costly visits to emergency rooms and hospital admissions can be avoided with proper diagnosis and management.

By Martin Sipkoff

Inadequate screening for and treatment of allergic asthma costs employers billions of dollars a year in lost productivity. Persistent and intermittent symptoms make the condition the fourth leading cause of work absenteeism and presenteeism, resulting in nearly 15 million missed or lost workdays each year.

According to the Asthma and Allergy Foundation of America, the direct and indirect costs of asthma were estimated to be about $18 billion in 2004. In 2000, the foundation conducted an extensive and comprehensive survey of direct and indirect costs associated with asthma. That survey determined that the disease costs more than $11.5 billion annually in direct medical expense and another $4.6 billion in indirect expense, including about $3 billion in lost productivity.

Allergic asthma is a family disease, adversely affecting the dependability of employees whose children suffer from the condition. The effect of childhood asthma on the workplace is therefore enormous: AAFA research demonstrates that between 1990 and 2000, the costs associated with the time adults lost from work when they cared for a child sick from asthma increased by 88 percent. In 1994, the most recent year for which there is data, missed school days by children age 5 to 17 cost employers $957 million in parents’ and caregivers’ lost work time.

To make matters worse, work-related or work-aggravated asthma, the occupational forms of allergic asthma, can exacerbate the symptoms of existing asthmatic conditions, further decreasing productivity. From 5 percent to 25 percent of newly diagnosed cases of adult asthma and aggravation of previously diagnosed asthma in adults are related to the work environment and result from asthma triggers such as chemicals and smoke.

The AAFA reports that every day, about 40,000 people miss school or work because of some form of asthma, 30,000 people have an asthma attack, 1,000 people are admitted to the hospital, and 14 people die. But the truth is that those numbers could be significantly lower if employees, encouraged by their employers, managed their disease successfully.

In 2002, according to the Centers for Disease Control and Prevention, asthma accounted for:

**What is asthma?**

Asthma is a chronic pulmonary condition in which the airways become blocked or narrowed when stimulated by allergens or other environmental triggers. Sufferers experience difficulty breathing; they cough, wheeze, and have shortness of breath. Allergic asthma is the most common form, affecting more than 10 million Americans — half of all asthma sufferers. It is triggered year-round by the inhalation of allergens such as dust mites, pet dander, pollen, and mold. These allergens trigger the antibody immunoglobulin E (IgE), which is a key component of the cascade that causes the symptoms that result in lost productivity.

• 12.7 million doctor visits,
• 1.2 million hospital outpatient visits,
• 1.9 million emergency department visits,
• 484,000 hospitalizations, and
• 4,261 deaths.

“Asthma can be disabling, and persons who have asthma may be unable to perform basic life tasks, such as attending school or work. It is a high-cost chronic illness in employment-based populations, although the costs are concentrated in a small number of undertreated and unmanaged patients,” says Adam Atherly, PhD, an assistant professor in the department of health policy and management in the Rollins School of Public Health at Emory University in Atlanta. He is also a health economist at the air pollution and respiratory health branch of the division of environmental hazards and health effects at the National Center for Environmental Health of the Centers for Disease Control and Prevention in Atlanta.

Asthma prevalence

Atherly and other CDC officials certainly view untreated asthma as pernicious. The agency’s National Center for Health Statistics estimates that as of 2003:

• 29.8 million people had been diagnosed with asthma during their lifetime;
• 19.8 million people currently were diagnosed with asthma; and,
• 11 million people experienced an asthma attack in the previous year.

One significant characteristic of asthma that is different from other chronic illnesses is that it affects one’s entire lifetime. Prevalence and costs of chronic illnesses, including diabetes and heart disease, tend to increase as people with those diseases get older. But asthma occurs among the young and the very old; prevalence generally does not relate to age. Its impact, therefore, can be felt by employers across their entire workforce, and by employees both as patients and as caregivers. For example, one study found that 39.1 percent of persons with asthma were younger than 18 years. In contrast, 1.4 percent of persons with dia-

Terms defined

The direct and indirect costs of untreated or undertreated asthma are a considerable segment of the nation’s health care expense. Direct medical costs include components such as the cost of hospitalizations, emergency department visits, office visits, medications, procedures, and laboratory tests. Indirect costs are from lost or decreased productivity as a result of the medical condition or its treatment. Presenteeism is when workers are present but working at decreased levels of productivity.

betes were younger than 18, but only 0.1 percent of persons with heart disease and hypertension were in that age bracket.

To gauge asthma prevalence and its relationship to the use of medical resources, one comprehensive review produced for the Centers for Disease Control and the Washington Business Group on Health used data from the 1997 Medstat database to study 3.8 million covered lives, including employees, spouses, and dependents. The database included private sector health claim data from more than 200 employers in many industries, including manufacturing, service, and finance. It covered outpatient, inpatient, and emergency room services, and also covered prescription drugs. People were identified as having asthma if they had an emergency room visit with asthma as the primary purpose, had a

Common and costly

According to the Asthma and Allergy Foundation of America:

• Asthma is one of the country’s most common and costly illnesses.
• Nearly 4 out of 5 Americans (77 percent) are directly affected by asthma; half (48 percent) have asthma in their household or immediate family; another 29 percent know someone with the disease.
• Its prevalence has grown to 20 million people in the United States and has been increasing since the 1980s in all age, gender, and racial groups.
• Allergic asthma is the most common form of asthma, affecting more than 10 million Americans, half of all asthma sufferers.

hospital visit with asthma as the primary purpose, or visited a physician with asthma as the primary purpose.

More than 105,000 people (2.8 percent) were identified as having asthma — a conservative estimate that did not include untreated or mild cases. And it was a lower rate than national averages, because they were employed people, i.e., a younger and wealthier population. Lower income people have a much higher prevalence of asthma.

The researchers came to some interesting conclusions:

• Asthma is evenly split among men and women (3.1 percent of women sought care; 2.5 percent of men sought care). The percentage of patients requiring emergency or inpatient care for asthma is also quite similar by gender.
• Asthma is evenly distributed across age groups, and so are the costs.
• There are no significant differences in asthma costs by member type (employee, spouse, dependent).
• There are no significant differences in asthma costs by type of industry.
• Health care utilization by employees or dependents with asthma is typically moderate.
• Most people with asthma do not use the emergency room or inpatient services.

Although the number of men and women who have asthma is fairly even, women account for nearly 65 percent of asthma deaths overall. Blacks are three times as likely as whites to be hospitalized from asthma or to die from it. The AAFA reports that racial differences in asthma prevalence, morbidity, and mortality are highly correlated with poverty, urban air quality, indoor allergens, lack of patient education, and inadequate medical care.

For asthma patients who do use emergency room or inpatient services, the costs are high. The Medstat-based study found that “[f]or most people with asthma, the costs are fairly low. Unfortunately, they are very high for those few who require emergency or inpatient treatment. The good news is that almost all emergency room visits and hospitalizations are avoidable with proper diagnosis and management.”

Lack of knowledge

The damaging health effects of asthma arise in some measure from a lack of patient and employer knowledge about the disease. In fact, according to the AAFA, few patients truly understand their condition: 81 percent of the general population and more than half of asthma sufferers (63 percent) are unaware that the most common form of asthma is allergic asthma. Only 38 percent of asthma sufferers and 27 percent of the general population consider allergens to be the most common trigger. What is worse, 88 percent of asthma patients believe that their asthma is under control, although:

• 61 percent have had to catch their breath while running upstairs,
• 50 percent have had to stop exercising midway through their regimen, and
• 48 percent have wakened in the middle of the night as a result of their asthma.

$3 billion in lost productivity each year

According to the Asthma and Allergy Foundation of America:

• The annual cost of asthma is estimated to be nearly $18 billion.
• For adults, asthma is the fourth leading cause of work absenteeism and presenteeism, resulting in nearly 15 million missed or lost workdays each year and a total cost of nearly $3 billion in lost productivity.
• In children ages 5–17, asthma causes more school absence than any other chronic illness. It accounts for an annual loss of more than 14 million school days (approximately eight for each student with asthma) and more hospitalizations than any other childhood disease. It is estimated that children with asthma spend nearly 8 million days per year restricted to bed.
• People who are not able to manage their asthma account for more than half of asthma-associated costs, with 80 percent of asthma-associated costs driven by 20 percent of the asthma population.
• Prescription drugs are the largest single direct medical expenditure, over $5 billion.

Costs are high for those few who require emergency or inpatient treatment, usually as the result of inadequate management. Research shows that almost all emergency room visits and hospitalizations are avoidable with proper diagnosis and management, with 20 percent of sufferers accounting for 80 percent of costs. Only 3 percent of persons with asthma were hospitalized in 1997, but inpatient costs accounted for nearly a third of asthma-related health care dollars spent.

These numbers are particularly unfortunate in that asthma is the third leading cause of preventable hospitalizations in the U.S. When properly treated, asthma sufferers have fewer emergency care visits, fewer hospitalizations, and reduced lengths of hospital stay. Children miss fewer days of school, so parents miss less work.

**Effects of childhood asthma**

Caregiver responsibilities associated with childhood asthma are, in fact, a major cause of lost productivity. “Employers have an important role to play in helping manage childhood asthma, and it is in their interest to do so,” says Seymour Williams, MD, a medical epidemiologist at the Air Pollution & Respiratory Health Branch of the CDC’s National Center of Environmental Health.

The data on the effect of childhood asthma on productivity are stunning. In children ages 5 to 17, asthma is the leading cause of school absences caused by a chronic illness. It accounts for an annual loss of more than 14 million school days per year (approximately eight days for each student with asthma) and more hospitalizations than any other childhood disease. It is estimated that children with asthma spend nearly 8 million days per year restricted to bed.

But, yet again, the lack of knowledge about childhood asthma is troubling. Most asthma caregivers — 89 percent — believe that their child’s asthma is under control, although:

- 49 percent of their children have had to miss days of school and/or work,
- 49 percent of their children have had to stop exercising midway through their regimen, and
- 45 percent of their children have been woken up in the middle of the night as a result of their asthma.

The problem is so significant that in February 2005, the National Business Group on Health’s Center for Prevention and Health Services conducted a forum for employers about childhood asthma. Researchers there reported that children with asthma have 3.5 times as many hospitaliza-

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**Estimated prevalence of asthma in nonsmokers by industry (Top 10)**

<table>
<thead>
<tr>
<th>Industry</th>
<th>Prevalence (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>General merchandise stores</td>
<td></td>
</tr>
<tr>
<td>Food, bakery, and dairy stores</td>
<td></td>
</tr>
<tr>
<td>Furniture, lumber, and wood</td>
<td></td>
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<tr>
<td>Banking and credit agencies</td>
<td></td>
</tr>
<tr>
<td>Elementary and secondary schools and colleges</td>
<td></td>
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<tr>
<td>Trucking service and warehousing</td>
<td></td>
</tr>
<tr>
<td>Health services, except hospitals</td>
<td></td>
</tr>
<tr>
<td>Primary metal industries</td>
<td></td>
</tr>
<tr>
<td>Utilities and sanitary</td>
<td></td>
</tr>
<tr>
<td>Transportation equipment</td>
<td></td>
</tr>
</tbody>
</table>

tions, 3.1 times as many medication prescriptions, and 1.9 times as many physician office visits as children without asthma.

The prevalence of disabling asthma in children has increased 232 percent since 1969. The disability prevalence of other childhood chronic conditions increased by only 113 percent over the same period.

Without proper management

Using available drugs and disease management techniques, we can control the costs associated with childhood and adult asthma. Because of untreated asthma’s high cost and prevalence, asthma care is now included in the Health Plan Employer Data and Information Set used by the National Committee for Quality Assurance to benchmark current practice standards and quality of care. For most people with asthma, medical costs are actually fairly low, about a $1,000 a year.

Reducing the cost of care for high-cost patients is one of the key current strategies for reducing the overall cost of care. Initiatives such as disease management attempt to identify persons who will be high-cost patients. Once these patients are identified, targeted interventions to prevent exacerbations of their disease, often resulting in hospital stays, are used.

In a study that concentrated on claims costs, the results of which were published in the June 2003 issue of The Journal of Allergy and Clinical Immunology, “the total per-person annual costs of asthma averaged $4,912, with direct and indirect costs accounting for $3,180 (65 percent) and $1,732 (35 percent), respectively. Medical costs accounted for 85 percent of the direct costs, with prescription medications, at $1,605, accounting for half of the total direct costs. . . . Other large components of direct costs included hospital admissions (15 percent of the total) and ambulatory care, excluding the use of emergency departments (11 percent). Emergency department use (6 percent) and outpatient procedures (3 percent) accounted for relatively little of the total cost. Of the $342 per person associated with nonemergency department ambulatory care, visits to physicians were responsible for all but $32. Of the $1,605 total per person accounted for by medications, prescription asthma bronchodilators and anti-inflammatory drugs were responsible for $962, whereas other asthma prescriptions and nonprescription drugs (including herbal remedies) accounted for $581 and $61, respectively.

Within indirect costs, total cessation of work accounted for $1,605 (61 percent), and the loss of entire workdays among those remaining employed...
accounted for another $486 (28 percent). Total per-person costs were $2,646, $4,530, and $12,813 for persons . . . reporting mild, moderate, and severe asthma, respectively.”

In another recent study, whose results were published in the February 2002 issue of The Journal of Allergy and Clinical Immunology, claim data were used to examine the incremental cost of asthma determined by matching asthmatic patients to persons with no record of asthma treatment. The researchers found that the use of health care services, as well as the rate of disability, was substantially higher for asthmatic patients than for control subjects.

In that study, the annual per-capita employer expenditures for asthmatic patients were approximately 2.5 times those for control subjects ($5,385 versus $2,121, respectively). For asthmatic employees with disability claims, total costs were approximately three times as high as those for disability claimants in the employee control sample ($14,827 vs. $5,280).

For asthmatic employees, wage-replacement costs for workdays lost as a result of disability and sporadic absenteeism accounted for almost as much as medical care. The researchers concluded that “[f]ailure to account fully for the broader consequences of asthma in terms of indirect and comorbid treatment costs . . . result[s] in a significant underassessment of the cost of asthma to an employer.”

According to the CDC, “[d]espite evidence that asthma death rates are leveling off and asthma hospitalization rates are declining, asthma’s impact on health, quality of life, and the economy remains substantial. Rates of severe asthma continue to disproportionately affect poor and minority populations. For example, African Americans visit emergency departments, are hospitalized, and die from asthma at rates three times those of white Americans. The initial onset of asthma cannot yet be prevented and asthma cannot be cured; however, asthma can be controlled, and people who have asthma still can lead high-quality, productive lives.

### Examples of occupations and associated agents known to cause work-related asthma

<table>
<thead>
<tr>
<th>Occupations</th>
<th>Agents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bakers, farmers, flour mill workers, grain elevator workers</td>
<td>Flour, grain dust</td>
</tr>
<tr>
<td>Silk-processing workers, research laboratory workers, insect-raising facility workers</td>
<td>Insects</td>
</tr>
<tr>
<td>Prawn, snow crab, and fish processors</td>
<td>Seafood, other marine organisms</td>
</tr>
<tr>
<td>Laboratory workers, animal handlers</td>
<td>Animal dander</td>
</tr>
<tr>
<td>Detergent producers, food industry workers, blood-processing laboratory workers</td>
<td>Enzymes</td>
</tr>
<tr>
<td>Carpet manufacturing workers, pharmaceutical industry workers, latex-glove manufacturing workers, health care workers</td>
<td>Gums, latex</td>
</tr>
<tr>
<td>Plastic, rubber, or foam manufacturing workers; spray painters; foam insulation installers</td>
<td>Diisocyanates (toluene, diphenylmethane, hexamethylene)</td>
</tr>
<tr>
<td>Solderers, electronic industry workers</td>
<td>Colophony (abietic acid)</td>
</tr>
<tr>
<td>Woodworkers, foresters, artisans</td>
<td>Plicatic acid (Western red cedar wood dust)</td>
</tr>
<tr>
<td>Refinery workers</td>
<td>Metals (chromium, platinum, nickel)</td>
</tr>
<tr>
<td>Textile workers</td>
<td>Dyes</td>
</tr>
<tr>
<td>Plastic and epoxy resin workers</td>
<td>Anhydrides (trimellitic, phthalic)</td>
</tr>
<tr>
<td>Adhesive handlers</td>
<td>Acrylates</td>
</tr>
<tr>
<td>Health care workers</td>
<td>Glutaraldehyde, formaldehyde</td>
</tr>
<tr>
<td>Pharmaceutical industry workers</td>
<td>Pharmaceuticals</td>
</tr>
</tbody>
</table>

Asthma can be controlled by following a medical management plan and by avoiding contact with environmental ‘triggers.’ These environmental triggers include cockroaches, dust mites, furry pets, mold, tobacco smoke, and certain chemicals.”

**WRA and WAA**

Environmental triggers can exist in the work environment itself. Work-related asthma (WRA) is one of the most frequently reported occupational lung diseases in a number of industrialized countries. In cases of adult-onset asthma, researchers estimate that more than 1 in 3 can be linked to the work environment. According to one extensive study, in the majority of cases, the suspected causes of asthma were latex, flour, grain, and vegetable gum. Nursing, clerical jobs, and food preparation occupations were most commonly linked to asthma. The researchers estimate that reducing exposure to substances known to trigger asthma attacks could prevent almost 1 in 5 cases of adult-onset asthma.

According to the Centers for Disease Control and Prevention’s National Institute for Occupational Safety and Health, in four states (California, Massachusetts, Michigan, and New Jersey) that maintained WRA surveillance programs between 1993 and 1999, the highest percentage of cases occurred in operators, fabricators, and laborers (32.9 percent), followed by managerial and professional specialties (20.2 percent), and technical, sales, and administrative support jobs (19.2 percent). Most cases were associated with the manufacturing (41.4 percent) and services (34.2 percent) industries. The study found that the triggers most frequently associated with WRA were miscellaneous chemicals, cleaning materials, and mineral and inorganic dust.

WRA can be classified into two conditions: work-aggravated asthma (WAA), which is pre-existing asthma that is exacerbated by workplace exposures, and work-related new-onset asthma, caused by workplace exposure to triggers. “WAA is a serious but often preventable occupational lung condition that may be completely reversed when the offending exposure is recognized early and removed,” according to a report in the June 2004 issue of *Occupational and Environmental Medicine*, “but may lead to chronic impairment when recognition is delayed and the offending exposure is prolonged. Prevention is an integral part of good medical management. In patients with work-aggravated or irritant-induced asthma, reduction of exposure to aggravating factors is essential. In patients with allergic occupational asthma, exposure should be eliminated because exposure to even minute concentrations of the offending agent can trigger a potentially fatal allergic reaction.”

No matter the form or cause of asthma, researchers agree that the key to controlling its cost is management. “We believe identifying and managing high-cost patients using strategies such as disease management can lead to cost savings,” Atherly says in discussing the cost effect of asthma in the workplace.

**Resources for this article**


Lee, Todd A. and Kevin Weiss. *An update on the health economics of asthma and allergy.* Current Opinion in Allergy and Clinical Immunology 2002;2:195


Williams, Seymour and Oona Powell. *Asthma Management in the workplace.* Business and Health 2001;5:44.


Asthma Medications Have Improved Markedly

Clinicians now have several classes of effective drugs to control the condition over the long term and to give immediate relief

By Bruce Flickinger

During the past decade, the treatment of asthma has changed dramatically, largely because of increased understanding of the pathophysiology of the disease. Recognizing that the airflow obstruction that characterizes this ailment is due to a combination of airway wall edema, increased mucus secretion, increased inflammation, increased airway irritability, and bronchial smooth-muscle contraction, and is not just due to bronchospasm, has led to a fundamentally altered approach to therapy.

Current asthma treatments are divided into long-term controlling agents and short-term relieving agents. The first group, which includes oral and inhaled corticosteroids (OCS and ICS), addresses the underlying causes of asthma and thereby reduces both the symptoms of the disease and the need for relieving agents. The second group, which includes short-acting beta-agonists, reduces the symptoms of airflow obstruction, such as relaxing smooth muscles and reducing bronchospasm.

Clinical practice guidelines from the National Heart, Lung, and Blood Institute (NHLBI) National Asthma Education and Prevention Program (NAEPP) recommend a step-therapy approach. First, use the appropriate dose or combination of therapies required to totally control symptoms and achieve a maximum, personal best, peak flow. Once the asthma has been controlled, step down the treatment plan to the lowest effective doses.

The increased prevalence and greater diagnostic awareness of asthma have placed greater demands on health care resources with regard to the disease, but effective asthma control can minimize the personal, social, and economic burdens of asthma. Early diagnosis and immediate anti-inflammatory treatment is the first step in gaining control of symptoms. A patient’s particular asthma severity then is classified and a treatment is developed. This approach necessitates regular review of treatment once asthma is under control.

Treatment and severity

Clinical practice guidelines call for asthma patients to receive one or more long-term (specific) treatments along with short-term (symptomatic) treatments. According to the NAEPP, asthma symptoms are classified as:

1. Mild intermittent, calling for a reliever as needed;
2. Mild persistent, calling for a reliever as needed and a long-term controller;
3. Moderate persistent, calling for a reliever as needed and two controllers; and
4. Severe persistent, calling for a reliever as needed, two controllers, and high-dose ICS and possibly OCS.

Specifically, mild intermittent asthma requires only treatment with a short-acting beta-agonist as needed. At the next level, mild persistent asthma requires long-term maintenance therapy, with the typical approach being to use a low-to-moderate dose of ICS and/or a leukotriene antagonist, plus a short-acting beta-agonist as needed. Moderate asthma usually is treated with a higher dose of ICS and/or a long-acting bronchodilator or a leukotriene antagonist.

For severe persistent asthmatic patients, the general approach is to treat initially with combinations of specific and symptomatic therapies to totally control the symptoms and then to reduce the treatments to the least amount of medications required to maintain remission. The combination of higher doses of ICS is the preferred treatment option; these patients might also require leukotriene antagonists and, if symptoms persist, an OCS.
In addition to pharmacological treatments, allergen immunotherapy, which involves the repeated administration of allergen vaccines, has been shown to be effective in allergic asthma and allergic rhinoconjunctivitis, and to lead to improvements in both allergen-specific and nonspecific bronchial hyper-responsiveness, according to the World Allergy Organization.

Furthermore, at least one paper (Durham 1999) has confirmed the long-term benefit of allergen immunotherapy after discontinuation. In this double-blind placebo-controlled withdrawal study, three to four years of grass pollen immunotherapy was shown to result in sustained reduction in symptoms and rescue medication for at least three years after discontinuation. This underscores the prophylactic value of immunotherapy, in contrast to pharmacotherapy where relapse of symptoms occurs immediately after discontinuation.

The use of monoclonal anti-immunoglobulin E (IgE) (omalizumab) is a recent treatment option that has been shown to reduce exacerbations, lower the need for corticosteroids, and reduce disease severity in moderate to severe persistent asthmatics. When an individual is sensitized to an allergen, he or she produces an IgE antibody directed against that allergen. These antibodies circulate in the blood and bind to mast cells, which contain inflammatory chemicals such as histamine and leukotrienes. IgE triggers mast cells to release these chemicals, which cause symptoms such as chest tightness, coughing, and wheezing. To counteract this, omalizumab binds to circulating IgE antibodies, decreasing the amount available to bind to mast cells.

**Mixed success**

While a number of treatment options are available and treatment guidelines generally are effective at allowing asthma sufferers to lead productive lives, findings have been varied as to what constitutes the appropriate combination of specific and symptomatic treatments. The key to any management plan is the reduction of exacerbations and, by extension, the need for hospital or emergency room contact. As such, concurrent asthma drug therapies could be important in predicting excessive health care utilization.

In an assessment of asthma management practices among general practitioners, Laforest et al. found overall suboptimal treatment, a key criterion for this assessment being the overprescribing of antibiotics — “a marker of inappropriate asthma management.” They found that antibiotics, expectorants, antihistamines, antitussives, and nasal corticosteroids were commonly prescribed while asthma controllers were underused.

Another study (Shireman 2002) found that “Despite nearly a decade of national efforts, asthma drug therapy patterns still have substantial room for improvement and continue to be associated with excess health care utilization.” Researchers examined usage patterns of ICSs, short-acting and long-acting beta-agonists, theophylline, and leukotriene receptor antagonists to identify asthma drug therapy problems based on national guidelines, and they found that patients on high doses of short-acting beta-agonists had the greatest chance of receiving an oral steroid burst and were most likely to be hospitalized.

Standard treatment regimens generally seek to strike a balance between ICSs and short-acting beta-agonists, but desired outcomes cannot always be achieved, and fluctuating asthma still can occur. One double-blind study (O’Byrne 2005) showed that in patients receiving low-maintenance dose budesonide/formoterol, these combination therapies could also be used as a reliever instead of a short-acting beta-agonist, providing rapid symptom relief and anti-inflammatory therapy simultaneously. The authors concluded that using budesonide/formoterol for both maintenance and relief prolonged the time to the first, second, and third exacerbation requiring medication intervention and improved symptoms and lung function compared to using both an ICS and beta-agonist on fixed dosing regimens.

Elsewhere, researchers have found the combination of a long-acting bronchodilator and an ICS, notably fluticasone/salmeterol or budesonide/formoterol, is an effective treatment option for the moderate or severe asthmatic patient. Oral theophylline can be used in addition to or in place of the bronchodilator or leukotriene antagonist, and in selected moderate to severe patients, anti-IgE can be added to reduce the need for ICS. (Stokes 2004)

A recent study (Humbert 2005), the first to demonstrate efficacy exclusively in the medically challenging population of inadequately controlled severe persistent asthma patients, found that omalizumab is particularly effective with these...
high-cost patients. Omalizumab was found to reduce the rate of clinically significant asthma exacerbations and emergency visits. It “halved the severe exacerbation rate,” reducing the emergency visit rate by 44 percent compared with placebo and cutting the hospitalization rate in half. It improved quality of life and lung function “without adding unduly to the side effects” of standard care.

Another study (Ayres 2004) also found omalizumab to be highly effective as add-on therapy for difficult-to-treat patients, reducing absentee rates and the use of health care resources. Rates of annualized number of asthma deterioration-related incidents (ADRs) were cut in half (from 9.76 per patient-year with best standard care [BSC] alone to 4.92 per patient-year) with the use of omalizumab. Omalizumab patients had a significantly longer median time to first ADR. Fewer needed systemic corticosteroids than those receiving BSC alone, and these patients also had fewer unscheduled physician visits and significantly less asthma-related absenteeism. This study also found omalizumab to be safe and well tolerated.

Shared responsibilities

Clinicians and advocacy groups agree that patient and provider share responsibility to assess, prescribe, and assure adherence to the regimen. But this can be challenging: Patients must learn the relevant environmental control and avoidance strategies and learn how to recognize and manage an exacerbation.

While adherence is a particular problem with children, it has been found to be of concern with working-age adults as well. One paper (Bender 2005) reviewed 32 patient-interview studies. The most common barriers to adherence included worry about drug safety and cost and belief that the asthma is not severe enough to require daily treatment. Important but less frequently cited concerns included worry about dependence or lessened effectiveness with long-term use of the medication.

Differences between clinicians’ and patients’ perceptions of treatment, and misperceptions on the part of the latter, are one barrier to adherence. One analysis found that patients interpreted side effects to mean long-term effects, while for clinicians, the term meant occasional problems. Some patients reported good control yet also reported frequent exacerbations. Although some patients complied with treatment guidelines, 62.2 percent tended to rely on bronchodilators for relief. In addition, 6.9 percent described their asthma as very well controlled yet reported experiencing asthma symptoms at least three days per week. (Hyland 2004)

Effective asthma management depends on successful patient education, adherence to prescribed medication, and good doctor–patient partnerships. Current treatment guidelines call for a written management plan accepted by doctor and patient, covering all aspects of asthma treatment, including prevention steps for long-term control and action steps to stop attacks once a worsening in asthma has been recognized. (Haahletla 2002)

Resources for this article


Accrediting Bodies Provide Guidance for Choosing Asthma DM Programs

Evaluating disease management vendors for asthma can be difficult, but NCQA, URAC, and JCAHO have programs that should help

By Tony Berberabe, MPH

Selecting a vendor to provide asthma management services can be daunting. If a health plan offers asthma management provided by a subcontractor, that vendor will have been evaluated, and there may be no reason for the purchaser to get involved, but when the purchaser contracts directly, it is important to find information that is accurate and unbiased. This is where accrediting agencies come in.

“Before looking for a program, employers need to have some sense of their health strategies — the employer’s overall philosophy and goal regarding health and their employees. This will dictate what they look for in a DM program,” says Bonnie Sechrist, senior associate at Mercer Human Resources Consulting. “The other requirement is having a good sense or profile of their employee population. Is the population an Internet-savvy group? If it’s not, you don’t want a program with a heavy component of Web-based tools” (See “What To Ask an Asthma Vendor,” page 14).

To help a purchaser make a decision, there are a number of accreditation bodies whose mission is to evaluate the quality of health care that organizations deliver.

Three major bodies

The three major bodies are the NCQA (National Committee for Quality Assurance), URAC (originally the Utilization Review Accreditation Commission but now just URAC), and the JCAHO (Joint Commission on Accreditation of Health-Care Organizations). They define, evaluate, and measure health care quality. Some employers and unions require that health plans that provide coverage to their employees and members be accredited. This applies to the DM vendors that the health plan uses and to those that are contracted directly by the employer. JCAHO provides certification to DM programs, rather than DM certification.

Sechrist says that the accrediting bodies are essentially looking at all the same components and standards when reviewing a health care organization. “If an organization passes one accreditation body’s review process, chances are good the organization can pass another’s.” In fact, many programs have dual accreditation.

While their criteria are similar, “there are subtle differences which have to do with how the accrediting body started and where it evolved from,” says Sechrist. “NCQA started out evaluating HMOs, JCAHO reviewed acute-care environments, such as hospitals, and URAC started out accrediting utilization review programs.

“It’s pretty standard for a purchaser, whether it is an employer or a health plan, to look for programs that are accredited.” This is especially true if the employer is self-insured.

“There is a confidence level attached to those programs evaluated by an accrediting body so that clinical-practice guidelines are in alignment with evidence-based guidelines,” says Sechrist. In asthma, the National Heart, Lung, and Blood Institute (part of the National Institutes of Health) guidelines are typically used.

Accreditation by one or more of these bodies

Outcomes can be compared from year to year in accredited plans, says Annette Watson, RN, MBA, chief accreditation officer and VP and general manager of client services at URAC.
What to ask an asthma vendor

One of the first questions a purchaser should have regarding a DM program is whether or not it is accredited, says Annette Watson, RN, MBA, chief accreditation officer and vice president and general manager of client services at URAC. Watson recommends that purchasers use accreditation status as a way to rule out vendors. She advises asking these questions as well:

- How will this save me money on emergency department claims for asthma?
- Will the program make sure that my employee is seeing the appropriate doctor?
- Will the program actually spend time one-to-one with my employee and not just send out mail?
- Will the program focus on prevention?
- How does the program work with the patient to ensure medication compliance?

NCQA’s HEDIS

The NCQA uses the Health Plan Employer Data and Information Set, or HEDIS, consisting of standardized performance measures developed by NCQA with assistance from managed care organizations and employers concerned with high-quality health care.

HEDIS contains a specific category for measuring asthma outcomes, performance, and utilization. “By measuring how a plan or program delivers its asthma care, in terms of outcomes, performance, and utilization, a purchaser can see how a program is improving from year to year,” says John Friedman, the NCQA’s director of communications. “In turn, the program wants to perform better from year to year, and monitoring its asthma HEDIS scores can help it.” Just the fact that the plan or program is actively measuring its asthma HEDIS scores can promote performance improvement, says Friedman.

HEDIS scores from 2000 to 2004, reported in NCQA’s “The State of Health Care Quality 2005,” show that commercial health plans have reported an increase of 3.6 percentage points in the rate of use of appropriate asthma medication for children ages 5–9 (see “Medication Use on the Rise,” page 15).

“So in 2000, the combined rate of commercial and Medicaid averages was 62.6 percent. That rate has gone up to 62.9 percent in 2004. There’s the benefit right there — an increase in the percentage of patients with asthma who are receiving proper medication thanks to measurement,” says Friedman. It should be noted, however, that a HEDIS score for asthma is not required to receive NCQA accreditation, according to Friedman.

JCAHO

JCAHO provides five levels of accreditation, starting with the most desirable: accreditation with commendation, accreditation, accreditation with type 1 recommendations, provisional accreditation, and conditional accreditation. JCAHO reports that most organizations receive accreditation with type 1 recommendations. An organization receives this rating when it has unsatisfactory compliance in a specific area.

JCAHO conveys asthma-specific care certification, designed to evaluate disease management and chronic care services that are provided by health plans, disease management service companies, hospitals, and other care delivery settings. The evaluation and resulting certification decision is based on an assessment of compliance with consensus-based national standards, effective use of established clinical practice guidelines to manage and optimize care, and an organized approach to performance measurement and improvement activities.

Jean Range, who is executive director for disease-
How are health plans stacking up? According to HEDIS measures, appropriate medication use is on the rise. That means increased productivity in the workplace, fewer visits to emergency departments, and fewer lost school days for children.

However, the difference between unaccredited programs and accredited programs, in terms of appropriate medication use, appears less pronounced.

“Both accredited and unaccredited health plans measure and report consistent rates. This reflects a commitment to providing the care regardless of whether or not it is required for NCQA accreditation,” says John Friedman, director of communications at NCQA.

### Asthma HEDIS scores (commercial rates only)

#### Asthma medication use in commercial plans

<table>
<thead>
<tr>
<th>Measure</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ages 5–9</td>
<td>66.7</td>
<td>69.5</td>
<td>72.5</td>
<td>75.9</td>
</tr>
<tr>
<td>Ages 10–17</td>
<td>63.2</td>
<td>65.2</td>
<td>68.1</td>
<td>69.5</td>
</tr>
<tr>
<td>Ages 18–56</td>
<td>67.3</td>
<td>68.7</td>
<td>72.3</td>
<td>73.8</td>
</tr>
</tbody>
</table>

Source: The State of Health Care Quality 2005, NCQA

### Effectiveness of care,

#### Accredited vs. non-accredited commercial plans (2004)

<table>
<thead>
<tr>
<th>Asthma medication use</th>
<th>Accredited</th>
<th>Non-accredited</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ages 5–9</td>
<td>76.4</td>
<td>73.9</td>
<td>2.5</td>
</tr>
<tr>
<td>Ages 10–17</td>
<td>69.8</td>
<td>68.6</td>
<td>1.2</td>
</tr>
<tr>
<td>Ages 18–56</td>
<td>73.9</td>
<td>73.4</td>
<td>0.5</td>
</tr>
</tbody>
</table>

Note: The numbers reflect the percentage of people enrolled in commercial HMO and POS plans that receive proper care (e.g., 76.4 percent of people ages 5–9 enrolled in publicly reporting commercial plans in 2004 received the proper asthma medication.

Source: The State of Health Care Quality 2005, NCQA

specific care certification at JCAHO, says, “An employer looking at certification would be able to come to the conclusion that these plans and programs have made a significant commitment to quality, safety, and continuous improvement of patient care.” Receiving JCAHO certification for a specific disease means the organization has met all the requirements for provision of effective and high quality care for that disease.

### Next big thing

Sechrist, the senior associate at Mercer, says that purchasers tend to go out looking for “the next big thing that will save health care dollars.” That could be a mistake.

“They’ve put in place some disease management programs, they may have a health risk assessment, and they have a PBM administering their formulary, but not all of those programs are in sync. For example, I’ve seen DM programs that want to get people with asthma more adherent to their medication regimen, but on the PBM side or the formulary side, those medications are on a high tier or available at a high copayment.”

An employer, she emphasizes, should look at all the different initiatives and benefits that it has, so that if it initiates an asthma disease management program, it will make sure that “whatever is going on with the disease management piece lines up with, facilitates, and supports whatever you are trying to accomplish with the pharmacy piece — basically do anything that will help facilitate the use of those asthma medications.”

Another factor to consider is how much collaboration goes on between the DM program and the provider. “It used to be that a lot of DM programs only focused on the patient,” says Sechrist, “but today, DM programs are building more physician engagement strategies into their initiatives.”

Whichever DM program you choose, make sure it supports the health strategies for the target population.

Sechrist points out that “it should be a good fit. If the program doesn’t engage your employees, the chances of it being effective are limited. Also, look for a program that has a strong behavior change component.”

### Resources for this article

Interview with John Friedman, June 30, 2006.
Interview with Jean Range, July 13, 2006.
Interview with Bonnie Sechrist, July 19, 2006.
Interview with Annette Watson, July 19, 2006.
The increasing prevalence of asthma, its large economic costs, and the success of treatment models for controlling the condition all add up to a growing opportunity for employers to help employees battle the disease.

Many companies are tackling asthma in the workplace through educational initiatives, specially designed pharmacy benefits, and programs that encourage better communication with physicians. Others are contributing to community efforts to distribute standard-of-care guidelines and make sure local and state policies reflect what’s best for people with asthma (see “Employers Take On Advocacy Role,” page 19).

“It’s all about creating a culture of health,” says Brent Pawlecki, MD, associate medical director of Pitney Bowes, a company that manufactures mail- and document-management equipment. By offering a series of asthma education programs and overhauling pharmacy benefits for employees with asthma, the company reduced emergency room visits for asthma attacks by 6 percent and hospital admissions for asthma by 38 percent. With 35,000 employees overall, that makes a difference, Pawlecki says. “The costs involved are an investment. People are going to be much more productive when they are healthy.”

As employers forge ahead, however, they will have to take innovative approaches to getting employees to participate in asthma programs and find ways to merge their efforts with those of health plans, experts say. Successful programs will address the barriers that exist to employees getting the best possible care (see “Employers Should Strive to Bolster Health Plans’ Asthma Programs,” page 18).

Asthma has long been a target of disease management for managed care companies and employ-
ers seeking to reduce the costs associated with care for chronic conditions. Asthma makes sense for several reasons: the high cost of treatment, the ease of identifying potential participants through pharmacy claims, and the availability of consistent clinical practice guidelines and educational material.

Asthma management programs are also cost-effective.

“We save three dollars for each dollar we invest well in asthma,” says Bruce A. Boissonnault, president of the Niagara Health Quality Coalition, an employer-led organization that spearheads health care initiatives with insurers and health care providers in western New York.

One review of 69 reports on asthma programs, most of them educational interventions with patients, found that a majority resulted in favorable outcomes. The programs significantly reduced emergency department visits in 83 percent of the 30 studies that measured such events, and hospitalizations in 77 percent of the 31 studies that measured admissions, readmissions, or inpatient days. Eighty-eight percent of the 16 reports that measured absenteeism from work or school found that asthma programs significantly reduced the number of days missed. All 17 studies that compared the costs of implementation with cost savings resulting from the effort found that the programs had a positive return on investment.

Frequent focus of DM

Today, asthma is the third most popular disease employers focus on with disease management programs. While 67 percent of large employers offer any disease management programs at all, 52 percent have disease management programs in asthma, according to the 2005 National Survey of Employer-Sponsored Health Plans conducted by Mercer Health & Benefits.

Documentation of the success of such programs in the workplace — rather than in hospital or managed care settings — dates back to 2001, when Bank One, along with Northwestern University Medical School and the University of Michigan, published what the company believes was the first report on the effects of a workplace-based asthma education program.

Bank One, now part of JPMorgan Chase, wanted to educate employees about the condition. Like many programs today, the goal was to help employ-

ees learn how to avoid allergens and other factors that aggravate the condition, how to recognize the early signs of an asthma attack, and how to use asthma medications to control the disease and relieve asthma symptoms. Bank One modified an existing patient education program and presented it to participating employees in lunchtime classes that covered those key educational objectives.

Using a series of health assessment questionnaires before and after implementing the asthma education program at its work sites, Bank One found that a small investment in education improved employees’ use of controller medications and their relationships with their physicians. Employees who attended the classes also reported fewer asthma-related symptoms and missed significantly less work after the program than they had before taking the classes. The results held true a year after the program.

Formularies being adjusted

While educational efforts remain a high priority for employers, companies are also adjusting formularies and pharmacy benefit designs to assist employees and their families with asthma.

The integration of education and pharmacy benefits is essential, says Pawlecki of Pitney Bowes.

In examining claims before launching its disease management program, Pitney Bowes found that a key predictor of high-cost claimants in one year was how much the person spent on health care the year before. “People who didn’t get any care the year before and people who spent a lot were our expensive cases the following year,” Pawlecki says. “But people with chronic conditions, including asthma, who spent about $800 a year were keeping in pretty good health.”

That $800 was the cost of keeping asthma under control, he says. “We realized that having asthma wasn’t the problem; the problem was having asthma and not being compliant with the proper therapy.”

To encourage employees to stick to standard guidelines for care, Pitney Bowes placed all asthma medications in the first tier of its formulary, meaning that employees had a 10 percent coinsurance payment, rather than 30 percent or 50 percent. Employees with asthma spent up to 50 percent less on coinsurance under the program, and the company saved money as well, Pawlecki says.
“Our annual cost of care for asthma decreased by 15 percent,” he says. “We thought our costs for pharmacy would go through the roof, but our annual pharmacy bill also decreased by 19 percent for asthma. Getting people on the proper therapies helped keep them from having to use expensive rescue medications.”

Removing the barriers
H-E-B Grocery, with 55,000 employees in Texas and Mexico, hopes to see similar results. The company is evaluating the success of a program it launched last year to remove financial and knowledge barriers that were getting in the way of employees sticking to recommended therapies. The program includes reduced copayments and rebates on asthma medications as well as disease coaching.

The goal of any asthma program is to get employees to use medications for asthma most effectively. When they do, they have better clinical outcomes and use fewer health care resources, according to a review of studies on the impact of appropriate pharmaceutical therapy on direct medical costs and workplace productivity. The report

Employers should strive to bolster health plans’ asthma programs
Employers that want to implement asthma programs for employees should complement efforts that health plans already have in place, says Ron Finch, EdD, vice president of the National Business Group on Health. “Health promotion programs at the worksite can strengthen the disease management efforts of health plans and other vendors. All of these programs need to be integrated.”

To create a strategy, then, it is important to know just what health plans are doing. Ninety percent of health plans, it turns out, provide educational materials to members with asthma, according to a recent survey of 134 health plan medical directors (see chart below). Health plans often distribute patient education materials to all members with asthma, while case management and telephone outreach programs are reserved for members with higher risk factors, the trade association America’s Health Insurance Plans found in a similar survey.

More than 80 percent of health plans also give educational material to providers. Almost all health plans have evidence-based practice guidelines for asthma management and distribute them to physicians, according to America’s Health Insurance Plans. A majority of plans provide feedback about patients with asthma to physicians, and many offer templates that physicians can use to create asthma treatment plans, the association found.

Where health plans may be falling short includes providing special types of pharmacy benefits, with just 10 percent offering to take actions such as waiving copayments for asthma medications. In addition, only about a quarter of plans that have asthma programs offer incentives to doctors who meet quality targets.

What asthma services are your health plans providing?

<table>
<thead>
<tr>
<th>Asthma management activity</th>
<th>Percent of managed care organizations conducting these activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>General member education</td>
<td><img src="chart.png" alt="General member education" /></td>
</tr>
<tr>
<td>Member education by mail</td>
<td><img src="chart.png" alt="Member education by mail" /></td>
</tr>
<tr>
<td>Self-management education</td>
<td><img src="chart.png" alt="Self-management education" /></td>
</tr>
<tr>
<td>Provider education</td>
<td><img src="chart.png" alt="Provider education" /></td>
</tr>
<tr>
<td>Internet member education</td>
<td><img src="chart.png" alt="Internet member education" /></td>
</tr>
<tr>
<td>Information technology member support</td>
<td><img src="chart.png" alt="Information technology member support" /></td>
</tr>
<tr>
<td>Member incentives to encourage compliance</td>
<td><img src="chart.png" alt="Member incentives to encourage compliance" /></td>
</tr>
<tr>
<td>Pharmacy benefits such as waiver of copayments</td>
<td><img src="chart.png" alt="Pharmacy benefits such as waiver of copayments" /></td>
</tr>
<tr>
<td>Other management strategy</td>
<td><img src="chart.png" alt="Other management strategy" /></td>
</tr>
</tbody>
</table>

finds clear economic evidence in a wide body of literature demonstrating that companies should ensure that employees have access to needed medications, are educated about the disease and about national treatment guidelines, and feel supported by their employers as they manage the condition in themselves and their children. Benefits include reduced absenteeism, lower direct medical costs, and higher quality of life.

Getting employees to participate in asthma programs, however, may be a challenge. The Niagara Health Quality Coalition worked with an employer to put an asthma class in place at worksites. The classes were poorly attended, even though employees would have been kept “on the clock” while attending, Boissonnault says. Follow-up surveys suggested that employees may not want their employers and colleagues to know they have asthma, Boissonnault says. Other researchers have noted that asthma programs may not attract as many participants as programs for other conditions — such as diabetes — because asthma does not require frequent testing.

Nevertheless, the presence of an asthma management program in a workplace may improve employees’ health — even if those selected for the program choose not to participate fully. In May 2006, researchers investigating participation in a four-year employer-sponsored disease management program documented that 779 of 3,400 employees identified through medical claims as candidates for an asthma program decided to join. After 12 months, just 216 were still participating. Nevertheless, all groups improved their adherence to recommended treatment guidelines, with nonparticipants showing the greatest improvement because they had started with the lowest rate of service use.

**Ask the vendors**

Evidence of low participation for worksite-based asthma programs indicates that employers evaluating asthma management programs should ask vendors what they do to encourage employee participation. It also reaffirms that a multipronged approach to asthma may be the best way to go for employers.

The Niagara Health Quality Coalition has taken on many asthma-based efforts. Several years ago, for example, it was one of the first health coalitions in the country to issue standard guidelines for the care of a chronic disease to providers in a region. The coalition’s asthma guidelines for physicians were signed by chief medical officers of the area’s three major insurance companies and endorsed by business and community leaders. The benefit to physicians was that they had one clear set of guidelines to follow, rather than separate documents from each health plan.

In addition, the coalition has worked with the American Lung Association to help schoolchildren with asthma. It educated parents, teachers, and school staff members about the condition through on-site lectures and a widely distributed video.

“We had seen asthma-related deaths in our schools because folks waited too long to call 911,” he says. “We had to do something.”

Employers have also been involved in efforts in Texas and other states to make laws and policies

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**Employers take on advocacy role**

Asthma is an issue in many national, state, and local policy debates, and employers can have an effect on these discussions. Environmental concerns, antismoking laws, and public health issues all potentially affect people with asthma.

In Texas, a coalition of employers, insurers, health care professionals, and public health and environmental agencies successfully lobbied for a law to help public school students have access to their medications.

A report in the *Journal of Law, Medicine, & Ethics* chronicled how almost all school districts in Texas have “zero-tolerance” drug policies that prohibit children from carrying any type of prescription or nonprescription medications with them during the day. These policies, which require authorized school personnel to administer medications, hinder children with asthma from getting the medicine they need when they need it. Sometimes minutes can make the difference between controlling an asthma attack and the need to be hospitalized.

The Asthma Coalition of Texas urged lawmakers to enact legislation allowing public school students with asthma to carry their inhalers in school.

The law passed, and the coalition’s success serves as an example for other groups urging better asthma policies, the authors of the report say. “The narrow bill that focused on asthma inhalers at school energized many people and got them much more excited than a disease management bill ever could. It was an issue that everyone could embrace.”
more adaptable to people with asthma, including children who need to carry medications with them at school as opposed to leaving them with a school nurse or other staff member (see “Employers Take On Advocacy Role,” page 19).

Working to improve the care that children with asthma receive is time well spent for employers, says Ron Finch, EdD, vice president of the National Business Group on Health, a coalition of large employers. “Employers can’t neglect this population. There’s an opportunity early on to teach children how to handle asthma.”

Companies should consider giving employees educational material to take home for their children as well as providing classes to teach employees about childhood asthma, according to a report issued by the National Business Group on Health. Children miss 14 million days of school each year because of asthma, and that often means that parents have to take days off as well.

Educational programs for parents could emphasize that children with appropriately managed asthma will not need to use emergency services frequently, if at all. And parents should be aware of what care is appropriate and when hospitalizations may or may not be needed so that they can help manage their children’s care, says Finch. One key disparity in care that must be addressed, according to the Asthma and Allergy Foundation of America, is that in blacks and Puerto Ricans, and especially in children, rates of asthma prevalence, hospitalizations, and deaths are higher than in whites.

**Taking a broad view**

“Employers should continue their efforts to eliminate disparities in health care by holding the health plans accountable,” Finch says.

Taking such a broad view of how to help employees deal with asthma, Finch says, is what will enable employers to improve outcomes, reduce costs, and enable their employees to live healthier lives.

**Resources for this article**


Other useful resources

**Asthma and Allergy Foundation of America**
*A not-for-profit organization for people with asthma*
1233 20th St. NW, Suite 402
Washington, DC 20036
www.aafa.org

**Allies Against Asthma**
*A national initiative aimed at improving asthma control for children and adolescents. Funded by the Robert Wood Johnson Foundation, the effort supports seven community coalitions around the country*
National Program Office
University of Michigan
School of Public Health
109 S. Observatory St.
Ann Arbor, MI 48109-2029
734-615-3312
www.asthma.umich.edu

**American Academy of Allergy, Asthma, and Immunology**
*A medical specialty organization for clinicians and researchers*
555 East Wells St., Suite 1100
Milwaukee, WI 53202-3823
414-272-6071
www.aaaai.org

**American Lung Association**
*An organization designed to fight all forms of lung disease*
The American Lung Association
61 Broadway, 6th Floor
NY, NY 10006
212-315-8700
www.lungusa.org

**National Business Coalition on Health**
*An association for employer-based health coalitions*
1015 18th St. NW, Suite 730
Washington, DC 20036
202-775-9300
www.nbch.org

**National Heart, Blood, and Lung Institute**
*Part of the National Institutes of Health; issues guidelines for asthma care*
Health Information Center
PO Box 30105
Bethesda, MD 20824-0105
301-592-8573
www.nhlbi.nih.gov

**National Business Group on Health**
*An organization that represents more than 200 large employers seeking innovative health care solutions*
50 F St. NW, Suite 600
Washington D.C. 20001
202-628-9320
www.businessgrouphealth.org

URLs verified Aug. 15, 2006
Taking Action on Asthma
Ideas for Employers

Every single day, about 40,000 people miss school or work because of some form of asthma. But it doesn’t have to be that way. From savvy benefit design to ensuring clean air at worksites, there are many ways that companies can help improve asthma outcomes for employees. This publication discusses the magnitude of the problem and describes what some employers are doing to deal with it. A few of the recommended strategies include:

- Ensure that health plans are appropriately screening, diagnosing, treating, and managing individuals with asthma.
- Ensure that formularies include a wide range of asthma medications and equipment.
- Craft benefit designs to encourage the appropriate use of services and discourage the inappropriate use of services.
- Educate employees about asthma.
- Support smoking cessation programs.
- Ensure that your worksite has clean and safe air and is congenial to the asthma sufferer by banning smoking and reducing or eliminating sources of mold and mildew. Also, use regular maintenance activities such as controlling cockroaches, preventing leaks, cleaning heating systems, and sealing windows.