

A View of Asthma in Oregon

Volume I Issue 4

December 2002

In This Issue

Pharmacologic Care for Asthma.....	1
Use of Rescue & Controller Medications for Asthma in Oregon.....	2
Managing Asthma Medications Appropriately.....	3
References	4

NOTES: Health plan data in this report exist as a result of a partnership (called the Asthma Data Workgroup, or ADWG) among statewide stakeholders and many of Oregon's health plans and systems. This unique collaboration paints a picture of asthma for nearly 600,000 commercial and Medicaid-insured Oregonians, aged 4-55 years, during the measurement period of 9/1/2000 and 8/31/2001. Though these data do not represent all Oregonians, they are likely typical of Oregonians with health insurance who live in or near urban centers.

These data represent efforts of the ADWG to measure the pharmacology population-based indicator in *The Guide to Improving Asthma Care in Oregon*.³ Due to the transient nature of health plan membership, the group chose to measure the indicator using the "fulltime equivalent" (FTE) concept. In other words, the numerator and denominator are measured in member months, or the sum of the months the members who met the criteria for inclusion were enrolled in the health plan during the 12-month period.

"I've been a stonemason for 30 years, working outside in all kinds of weather and breathing in lots of concrete and stone dust. I also have asthma, but I never thought it was a big deal. As I started getting older, though, I was wheezing all the time, and had several bouts of pneumonia. I used my brother's [albuterol] inhaler, but it didn't help. Finally, my wife convinced me to see a physician. My doctor started me on a controller medication immediately. Today, my quality of life has turned around 100%. I hardly ever wheeze and it's really helped my endurance at work. These meds really work. I wish I had started using them sooner." Jack, 54

Pharmacologic Care for Asthma

Asthma is a disease characterized by ongoing inflammation of the airways, an overproduction of mucus, and airway constriction due to tightened muscles. The airway swelling in particular is thought to contribute to permanent structural changes in the lungs, a condition often called airway remodeling. In turn, these changes usually lead to accelerated declines in lung function, including irreversible decreases in airflow due to narrowed air passages[SSS1].

Pharmacologic care for asthma generally relies upon two types of medications. "Controller" medications (primarily inhaled corticosteroids), taken on a daily, long-term basis, reduce airway swelling. These medications are preventive. Alternately, "rescue" medications (primarily short-acting beta₂-agonists), taken as needed, quickly relieve the acute constriction of the muscles surrounding the airways that occurs during an asthma attack.

Not everyone who has asthma must be on both types of medicine. For people with mild intermittent asthma, a rescue medication as well as minimizing exposure to asthma triggers is the recommended regimen. The ma-

ajority of people with asthma, however, fall into one of three categories of persistent asthma: mild, moderate or severe. No matter the severity, the best therapy for most people with persistent asthma includes daily use of a controller medication. There is also some evidence that early use of anti-inflammatory therapy might lead to disease modification and limit the progression of airway remodeling.

When controller medications are used appropriately, acute airflow obstruction and airway constriction should occur rarely, and short-acting beta₂-agonists and other rescue medications should only be needed intermittently. Excessive beta₂-agonist use is therefore a sign that a patient's asthma is not well managed with controller medications. Thus frequent filling of prescriptions for rescue medications is a good marker for poorly controlled asthma, and ought to be monitored.

If asthma medications exist that prevent day-to-day symptoms, keep asthma under control in the long run and have few, if any, side effects, what keeps people with persistent asthma from taking them, as local data

reveal? Well, that's something we can't answer definitively. However, concerns about steroids may play a role. Some practitioners and patients worry about potential adverse effects of long-term use of inhaled corticosteroids, such as reduced linear growth or bone density loss. These fears continue, despite evidence that when taken at the recommended dosages, inhaled corticosteroids (ICS) are well tolerated and safe. The potential, yet small, risks of adverse effects must be weighed against the risks of uncontrolled asthma.^b

Another challenge is that even when clinicians prescribe controller medications appropriately, they don't necessarily know if patients are filling their prescriptions, and how often. Other reasons for underuse of ICS may include the cost of the medication or lack of insurance coverage (beta₂-agonists are less expensive than ICS), the ease of using rescue medications for the immediate abatement of symptoms versus the long-term commitment to taking daily inhaled corticosteroids, the perception that asthma is acute, not chronic, and denial of having the disease.

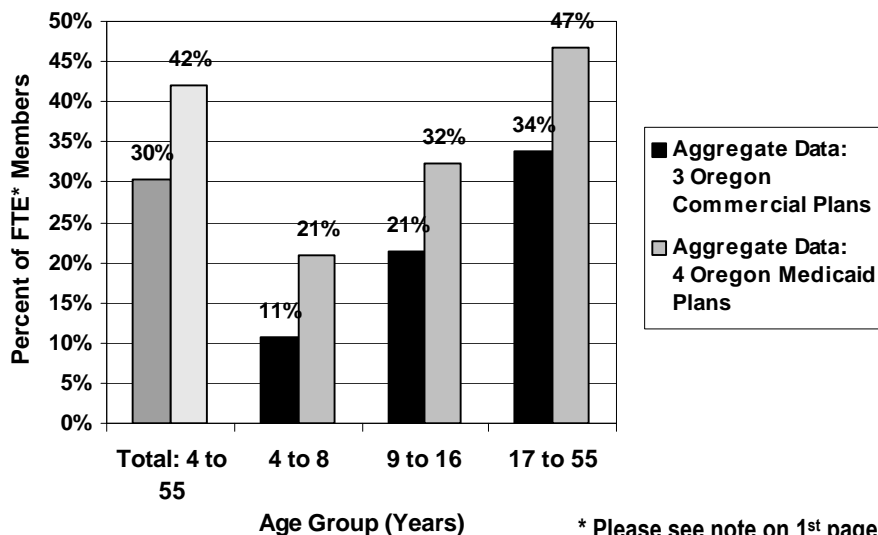
Use of Rescue and Controller Meds for Asthma in Oregon

So how does the use of medications among Oregonians with persistent asthma stack up? It turns out that a significant proportion [SSS2] overuse rescue medication. *Data from Oregon's health plans show that on average, 30-42% of those aged 4 to 55 years old with persistent asthma are filling prescriptions for 6 or more beta₂-agonists canisters or nebulizer prescriptions in a year.* As shown in Figure 1, overuse of beta₂-agonists increases with age, and is consistently higher among those with Medicaid than those with commercial insurance.

Poorly controlled asthma, which the overuse of beta₂-agonists indicates, is a significant contributor to asthma morbidity and mortality in the United States. In 1999, uncontrolled asthma accounted for over 1.9 million emergency department visits, 478,000 hospitalizations, and 4,657 deaths in the United States. In 1994-96, asthma accounted for an annual average of 14.5 million work absence days and 14 million school absence days.^c

Some argue that filling numerous rescue medication prescriptions does not necessarily correlate with overuse of these medications – that it is really a function of having duplicate inhalers at work, school, and grandma's house. This may sometimes be the case, but evidence shows that patients who re-

Figure 1. Health plan members with persistent asthma who overuse beta₂-agonists



ceive one or more metered-dose inhaler per month on average have an increased risk of death or near-fatal asthma, even among those who appear to have less severe asthma.^d

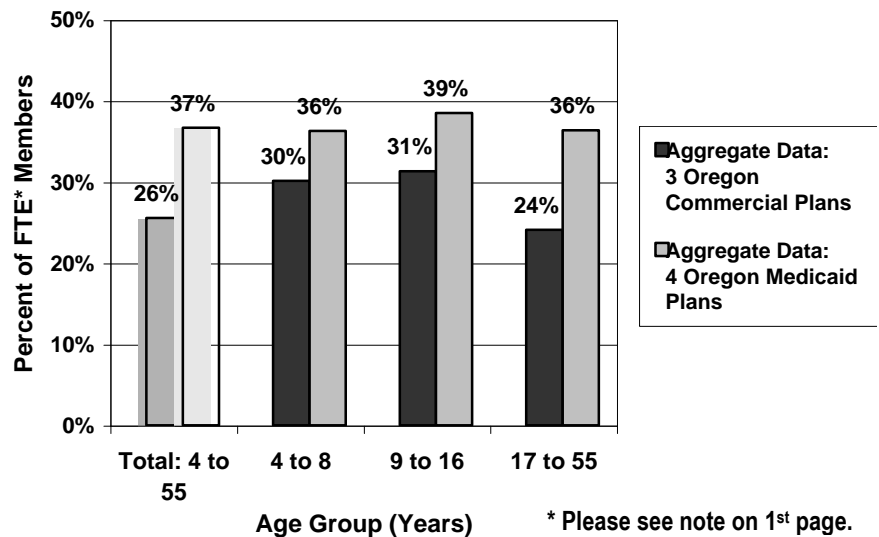
So far we know that many Oregonians with persistent asthma over-depend on their rescue medications, but what about their use of controller medications? *Data from Oregon's health plans indicate that 26-37% of people aged 4 to 55 years old with persistent asthma did not fill even one prescription for a controller medication within a year.* As shown in Figure 2 (following page), this finding is consistent across age groups, and similar between those with commercial and Medicaid insurance.

Although these data are worrisome, they do not tell the whole story. Of equal concern is that even among those who take inhaled corticosteroids, many do not attain doses sufficient to control their asthma. National studies estimate that people with asthma who use ICS take less than the recommended dose 24 to 69% of days.^e This situation occurs

when patients do not take their medications as prescribed, either purposely or unwittingly.

A less obvious issue is that even those who have been prescribed and are taking appropriate doses may not be receiving therapeutic doses. Inhalation methods affect delivery of ICS, and studies have found that 46 to 59% of patients use effective techniques.^e For instance, properly coordinating inhalation and actuation of a metered-dose inhaler can be a challenging skill to master. It has been demonstrated, however, that training can improve the efficacy with which people use their inhalers.

Figure 2. Health plan members with persistent asthma who filled no controller meds in 1 yr



Managing Asthma Meds Appropriately

Given the difficulties that people with persistent asthma have in taking medications optimally, it is vital that medical providers, patients with asthma, and their families understand the difference between controller and rescue medications, the function they serve, and their appropriate use.

Since the 1991 publication of the Guidelines for the Diagnosis and Management of Asthma,^f inhaled corticosteroids have been considered the cornerstone of pharmacologic management of persistent asthma among adults. More than ten years later, the science behind this recommendation has only strengthened. Updated guidelines from the National Asthma Education and Prevention Program advise that inhaled corticosteroids are the best available therapy for children five years of age and older with mild or moderate persistent asthma.^g The same still holds true for adults with persistent asthma.^b In addition, improved outcomes may be achieved for persistent asthmatics with the addition of a long-acting inhaled beta₂-agonist to low-to-medium doses of inhaled corticosteroids.^g

Data in this report reveal a troubling gap between recommendation and practice, however. Perhaps the biggest contributor to this dilemma is that asthma is a *chronic* disease being cared for in a system designed to care for *acute* health problems. A recent CD Sum-

mary^h suggested that a solution may lie in redesigning the health care system using the Chronic Care Model.

One component of this model is the *planned visit*—e.g., specifically for asthma care. Such a visit allows support staff to provide physicians with a brief summary of relevant data (for instance, prescription refill history), a list of recommended preventive care now due (for instance, a flu shot) and the patient’s self-management goals. When this concept was tested for diabetes care, physicians reported that more of the visit was spent talking to the patient and less time was wasted searching for information.

Another component of this model involves delegating certain aspects of routine patient care to other members of the team, also known as standing orders. Staff in diabetes test sites reported increased job satisfaction when their roles were expanded in this manner.

Yet another feature of the Chronic Care Model is a focus on self-management support. For instance, pharmacists may prove potent allies in improving patients’ skills for managing asthma medications. Inhalation techniques, correct dosing, and reinforcing the importance of ICS are all arenas in which pharmacists could buttress patients’ abilities to self-manage.

Finally, the concept of a registry may prove invaluable for improving pharmacologic care for asthma. Regis-

tries are databases with information on all patients in the clinic with a specific condition. When diabetes registries were created, test sites quickly discovered that the patients they never saw were the ones with the most health problems. The same may also be true for asthma patients who do not seek routine care.

Though the applicability of the Chronic Care Model has not been as thoroughly tested with asthma as with diabetes, preliminary efforts and similarities between the

diseases give reason to hope that pursuing these systems changes will, in fact, improve outcomes for patients with asthma. Why not test some of these concepts out and report back to us? In early 2003 the Oregon Asthma Program will be releasing a request for grant proposals (RFGP) to do just this. Please be on the lookout for more information, or call us to be notified of the RFGP.

References

These listings are the primary sources used for this issue of A View of Asthma in Oregon. If you would like information on additional sources regarding medications for asthma, please contact the OAP.

- [a] Oregon Asthma Program 2001, *Guide to Improving Asthma Care in Oregon: Indicators for Quality Care in Health Systems*, Available: <http://www.ohd.hr.state.or.us/asthma/guideor.htm>.
- [b] National Asthma Education and Prevention Program 1997, Expert Panel Report 2: Guidelines for the Diagnosis and Management of Asthma, National Institutes of Health pub no. 97-4051, Bethesda, MD.
- [c] Centers for Disease Control and Prevention. Surveillance for Asthma – United States, 1980-1999. *MMWR* 2002; 51(SS01): 1-13.
- [d] Spitzer WO, Suissa S, Ernst P, Horwitz RI, et al. The use of b-agonists and the risk of death and near death from asthma. *NEJM* 1992; 326(8): 501-506.
- [e] Cochrane MG, Bala MV, Downs KE, et al. Inhaled corticosteroids for asthma therapy: patient compliance, devices and inhalation technique. *Chest* 2000; 117(2): 542-550.
- [f] National Asthma Education and Prevention Program 1991, Expert Panel Report: Guidelines for the Diagnosis and Management of Asthma, National Institutes of Health pub no. 91-3642, Bethesda, MD.
- [g] National Asthma Education and Prevention Program Expert Panel Report: Guidelines for the Diagnosis and Management of Asthma Update on Selected Topics – 2002. *J Allergy Clin Immunol* 2002; 110(5): S143-S219.
- [h] Oregon Department of Human Services, Health Services. The cure for hamster health care. *CD Summary* 2002; 51:24.

If you have questions about your or your child's asthma, or want to learn how to better manage your disease, your doctor, nurse or other health professional is an excellent resource for asthma information. Please speak with him or her, or call the Oregon Asthma Program at (503) 731-4273.

OREGON ASTHMA PROGRAM

Department of Human Services
800 NE Oregon Street, Suite 730
Portland, OR 97232
Website: www.oshd.org/asthma
E-mail: asthma.ohd@state.or.us



If you need this material in an alternate format, please call Debi at 503/731-4273.