

# High-Quality Asthma Care: It's Not Just About Drugs

By Harold J Farber, MD

## Abstract

Asthma care is based on three simple, basic concepts: reduce triggers, use controller medicine, and take early action in flare-ups. Implementing these concepts is difficult, however, and nonadherence is common. The patient, family, and health care system tend to focus their attention on crisis care instead of on control, and long-standing behaviors are hard to change. Adherence to asthma control regimens can be improved if clinicians and their patients focus more attention on communication skills, mutual problem solving, and follow-up. Use of a stages-of-change model also can be valuable for facilitating important behavioral change.

## Introduction

The basic concepts of asthma care can be considered as three lines of defense:<sup>1</sup>

- Manage the environment: Identify and either remove or reduce asthma triggers in the home, school, and work environments.
- Manage the airways: Use asthma controller medications to make the airways less sensitive.
- Manage the flare-ups: Have a plan to recognize asthma flare-ups early and take appropriate action.

Although these concepts are simple, implementing them can be difficult. Lifestyle changes are required. The patient, family, and physician have to switch their focus from intermittent crisis care to daily control care. Patients may be required to conquer powerful addictions, such as tobacco addiction.

Dogs and cats may be important asthma triggers for a patient yet may also be very important members of the family. Exposures may occur at work, at school, or at leisure activities. To provide effective asthma care is to facilitate important lifestyle changes.

Nonadherence to asthma control treatment is extremely common.<sup>2</sup> Nonadherence to asthma control therapy is one of the most common reasons for poor asthma control and for recurrent asthma crises.

Reliance on crisis care—measured by overuse of quick-relief medication—is associated with increased risk for asthma-related Emergency Department visits, hospitalization, admission to the intensive care unit, and death. In contrast, risk for these events is reduced by regular use of asthma control medications, especially inhaled corticosteroid agents.<sup>3-7</sup>

Despite these facts, crisis care is what comes naturally: Most people

don't want to take medicine when they feel well. They also don't want to change their long-established habits. If a situation is not "in our face"—presented to us as an immediate, major problem—we don't want to deal with it. Many "more important" things command our attention.

Even within our health care system, crisis care gets the glory; long-term control care is treated as the poor stepchild. Hospitalization, Emergency Department visits, and urgent care receive the lion's share of asthma care dollars.<sup>8</sup> Someone in respiratory distress commands our immediate attention. But those of us who are passionate about asthma care often have to fight for resources to advance long-term asthma control. The argument is frequently made that if we divert resources for long-term control care, we won't have sufficient resources for crisis (urgent) care. But what would happen if we applied this same "logic" to airline safety? Focusing on crisis care instead of on long-term asthma control is not just the counterproductive behavior of patients and their families—health care systems do it too.

Implementing an approach to asthma control starts in the physician's office but does not end there: Asthma-friendly communities also are needed. What is the quality of our housing stock? How pol-

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luted is our indoor and outdoor air? How many asthma triggers are present in our children's schools? How much smoke (from tobacco or other sources) are we exposed to in places of work and leisure? And what stories do we tell each other about asthma? What are our beliefs and expectations? Do we expect our asthma to be in good control? Do our children have appropriate access to health care? When we consider nonadherence to health recommendations, we note issues relating to the patient and family; however, other issues require a community's resolve for implementation. And that is where involvement in the community becomes important.

#### Web sites for information on community asthma coalitions:

- American College of Chest Physicians: [www.chestnet.org/education/physician/asthma](http://www.chestnet.org/education/physician/asthma)
- Bay Area Regional Asthma Management Program: [www.rampasthma.org](http://www.rampasthma.org)

Perhaps one of the most challenging parts of asthma care is overcoming nonadherence. Nonadherence is often multifactorial. As disease has a differential diagnosis, so does nonadherence. When exploring the relevant history, predisposing factors must be discovered, including motivations and opportunities for intervention. For some patients, the unpleasant taste of the medicine leads to putting off the dose. At other times, it is the complexity or perceived burden of the regimen. Taking medicine daily may conflict with their health beliefs, care ex-

pectations, individual lifestyle priorities, or any of these. Patients or parents may misunderstand the role of the medicine.<sup>9</sup> Patients or parents may believe that any medicine they can't feel can't be working. Cost may be a barrier. Other possible factors may be steroidophobia, having a disorganized lifestyle, or insufficient parental supervision. Taking medicine to stay well might not rate a high enough priority with the patient, parent, or household.

### Strategies for Improving Asthma Control Compliance and Outcomes

#### Follow-up, Cultural Awareness, and Communication

Follow-up is important. Single-session educational programs do not substantially improve outcomes.<sup>10,11</sup> Progress and success must be monitored and reinforced. Communication skills are important.

In a study of Medicaid-insured children with asthma, Lieu et al<sup>12</sup> found that physician practice sites which had policies and procedures promoting cultural competence had greater adherence to asthma controller use and also generated greater patient satisfaction. Policies and procedures considered as promoting cultural competence included recruitment of ethnically diverse and bilingual nurses and providers, attempts to minimize cultural barriers through printed materials, offering crosscultural or diversity training, offering communication skills training, and evaluation of the level of cultural competence among providers.<sup>12</sup>

In a randomized controlled clinical trial, Clark and Gong<sup>13</sup> found that an asthma training program for physicians that included training in asthma clinical practice and in how to create a partnership with patients

led to physician behavior changes, improved patient satisfaction, and decreased health care utilization. These results were accomplished without requiring any more visit time.

The training was focused on helping physicians to create interactive conversation; to create a supportive atmosphere; to reinforce self-management actions; to engage and to share in the process of solving problems; to strengthen patients' skills in using medicine; and to build patients' confidence that their asthma can be controlled.

Ten communication behaviors were emphasized in the course:

- Show nonverbal attentiveness.
- Give nonverbal encouragement.
- Give verbal praise for things done well.
- Maintain interactive communication.
- Discover underlying worries and concerns.
- Give specific, reassuring information.
- Tailor medication schedule to the family's routine.
- Reach agreement on a short-term goal.
- Review the long-term therapeutic plan.
- Help patients to use criteria for making decisions about asthma management.<sup>13</sup>

### Using a Stages-of-Change Model

A "stages-of-change" model is often helpful for implementing shared decision making<sup>14,15</sup> (see sidebar). This model postulates that people go through five stages in implementing behavior change: *precontemplation, contemplation, preparation, action-implementation, and maintenance*. The goal of health professionals is

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### Stages of Change Model<sup>16</sup>

- **Precontemplation**

Description: Does not intend to implement desired behavioral change

Goal: Move to the contemplation stage

Stage-matched intervention:

- Discover barriers to behavioral change

- Discuss value of change

- Find out what patients and parents are willing to do

- **Contemplation**

Description: Intends to implement behavioral change within next six months but not now

Goal: Move to the preparation stage

Stage-matched intervention:

- Assist to identify and overcome barriers

- Use problem-solving techniques for overcoming obstacles

- Build confidence

- **Preparation**

Description: Plans to implement behavioral change soon (within the month)

Goal: Move to the action stage

Stage-matched intervention:

- Identify specific changes to make

- Make specific plans for implementing change

- Role-play changes

- **Action-Implementation**

Description: Behavioral change recently made (within the past six months)

Goal: Maintain behavioral change

Stage-matched intervention:

- Ask about strategies to overcome difficulties

- Ask about lapses and discuss ways to recover from them

- Provide positive reinforcement

- **Maintenance**

Description: Behavioral change made more than six months ago. Temptation to relapse is less than initially but is not zero.

Goal: Maintenance of behavioral change

Stage-matched intervention:

- Ask about any lapses or temptations to relapse

- Provide positive reinforcement

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to help patients to negotiate these stages of change.

At *precontemplation*, patients do not intend to change their behavior. At *contemplation*, patients intend to change their behavior within the next six months but have not yet made a commitment to action. At *preparation*, patients intend to implement behavior change soon

(within one month), perhaps having tried previously without success.

At *action-implementation*, patients have recently (within the past six months) made the behavior change, and risk of relapse is highest. At the *maintenance* stage (six months to five years post change), risk of relapse is still present, although not as high as during *action-implementation*.

To help patients (and parents) negotiate these stages, messages must be stage-matched. Discovering why the patient is stuck at a particular stage will enable the clinician to find the key to moving the patient forward. Starting with a differential diagnosis of what may be causing the patient to be stuck at a particular stage, the clinician can probe to identify factors that are important for this person and for the family. The differential diagnosis lets the clinician know what to probe for; realistic plans can then be made as part of a shared decision-making process.

*The Precontemplation Stage.* The patient or parent (or both) do not intend to implement a desired behavioral change. The goal is to move them to contemplation. Discussing *action/implementation* when a person is at *precontemplation* may not be fruitful. Stage-matched interventions could include discovering barriers, discussing the value of a proposed change, and finding what the patient or parent is willing to do. When the desired behavioral change is daily use of asthma controller medicine and the patient is at *precontemplation*, barriers may include unpleasant taste; misunderstanding the role of the asthma controller medicine; not perceiving a benefit to regular use of asthma controller medicine; not perceiving harm in the frequent use of crisis-care medicine; fear of adverse effects of the medicine (steroidophobia); or believing that the medication regimen is too difficult or complicated to fit into their lifestyle. Barriers to removal of a pet may include emotional attachment; home security; or not perceiving the harm. Barriers to secondhand smoke elimination may include not perceiving the harm; belief that current efforts to limit exposure are effective; dependence

on a smoker for housing or child care; and belief that the tobacco addiction cannot be overcome.

Understanding the barriers to moving past *precontemplation* can guide discussion about what the patient or parents *are* willing to consider doing. For example, if the barrier is unpleasant taste, discussion may focus on minimizing the bad taste or on changing to a medicine with a less unpleasant taste. If the patient or parent does not perceive a benefit of using asthma controller medication or misunderstands its role, consider discussing that role, goals of therapy, harm from frequent crisis care, and expected benefits of therapy. If fear of medication side effects is the case, candid discussion of potential side effects, of risk vs benefit, or of medication or dose alternatives may help. And when giving away a pet is not an option, discussion could focus on exploring what the family is willing to do.

*The Contemplation Stage.* This stage is when the patient or parents, or both, are considering making a particular behavioral change within the next six months but not immediately. They are aware of the advantages of this change but are also aware of its difficulty. The goal is to move them to preparation. A stage-matched intervention would focus on helping them to identify and overcome barriers, would use problem-solving techniques to eliminate obstacles, and would build their confidence that they can make a change that has beneficial results.

At *contemplation*, barriers to daily use of asthma controller medicine might include living between two households and not having a supply of medicine at each location. Work schedules might prevent adequate supervision of the child, or medication might be stored in an out-of-the-way place. Stage-matched in-

terventions could include such measures as prescribing a separate medication supply for each household; administering medication at a time when a parent can supervise its use; or moving the asthma controller inhaler to a convenient location (such as near the toothbrush).

Stage-matched interventions to reduce secondhand smoke exposure could include setting up a smoking area in the backyard and keeping the child inside when an adult is smoking outside. If the adult wants to quit but does not know how, the smoking cessation strategies could be discussed,<sup>17</sup> written information about smoking cessation could be provided, or the adult could be referred to a stop smoking class or helpline (such as the California Smokers Helpline, 1-800-NO-BUTTS).

Stage-matched interventions to reduce exposure to pet dander could include having the pet live at a friend or neighbor's home, or perhaps the pet could be kept in the garage or outside.

Solutions will differ for each family. Finding out what the patient and parent(s) are willing to do as part of a shared decision-making process is critical.

*The Preparation Stage.* The patient or parents, or both, intend to implement the behavioral change in the immediate future, usually defined as within the next month. The goal is to help them move to action. Stage-matched interventions are designed to identify specific, needed changes and to facilitate the development of plans for implementing the change.

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At *preparation* for taking asthma controller medicine daily, a stage-matched plan might designate an accessible place to keep the medicine and might select a routine time for taking the medicine (eg, before brushing teeth, before meals, or when getting dressed or undressed). For smoking cessation, a stage-matched plan

might include obtaining the needed prescriptions and signing up for a smoking cessation class. For reducing exposure to smoke from an indoor woodburning appliance (fireplace), plans might include purchasing sweaters or an electric heater. And for reducing pet exposure, plans could include identifying the friend or animal shelter that will receive the pet or perhaps placing a pet house in the backyard.

*The Action-Implementation Stage.* The patient or parent has made the behavioral change recently, ie, within the past six months. The goal at this stage is to maintain the behavioral change. In a stage-matched intervention, the clinician might ask about strategies to overcome difficulties, ask about lapses, and discuss ways to recover from them. The clinician might ask how the patient remembers to take the asthma controller medicine and when it is to be taken. Consider asking about forgotten doses. Anticipate difficulties: Discuss situations where taking controller medicine may be difficult, such as when the patient feels well or when the family or child's routines change (such as during vacations). For smoking cessation, discussion could focus on how to deal with cravings, friends who smoke, or

other potentially difficult situations.

Even after the patient has reached the *action-implementation* stage, follow-up is important. Relapse into nonadherence is common, and the consequences are often not immediately apparent.

*The Maintenance Stage.* Patients who have reached the *maintenance* stage still must exert some effort to prevent and respond to relapse but not as much as was needed at *action-implementation*. The *maintenance* phase has been estimated to last from six months to five years. Stage-matched interventions could include asking about lapses or

temptations to relapse and providing positive reinforcement. Intervention could also involve a plan to reevaluate the child's asthma control and medication needs at regular intervals.

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### Conclusion

Knowledge is important, but knowledge alone does not change behavior.<sup>18</sup> We know how to control asthma in most cases. The difficult part is the implementation—by the patient and family, by the health care provider, and by the health care delivery system. When facilitating behavioral change, determine the stage of change (*precontemplation, contemplation, preparation, action-implementation, or maintenance*). Provide stage-matched messages. Remember the principle of KIS, an acronym for the cautionary expression, “Keep It Simple!” The more things added to the patient's prescribed regimen for asthma control, the less likely that any of it will get done. Simplify and prioritize the changes. Focus messages on the patient's and caregiver's stage of change. ❖

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### References

1. Farber HJ, Boyette M. Control your child's asthma: a breakthrough program for the treatment and management of childhood asthma. New York: Henry Holt; 2001.
2. Finkelstein JA, Lozano P, Farber HJ, Miroshnik I, Lieu TA. Underuse of controller medications among Medicaid-insured children with asthma. *Arch Pediatr Adolesc Med* 2002 Jun;156(6):562-7.
3. Farber HJ, Chi FW, Capra A, et al. Use of asthma medication dispensing patterns to predict risk of adverse health outcomes: a study of Medicaid-insured children in managed care programs. *Ann Allergy Asthma Immunol* 2004 Mar;92(3):319-28.
4. Suissa S, Ernst P, Benayoun S, Baltzan M, Cai B. Low-dose inhaled corticosteroids and the prevention of death from asthma. *N Engl J Med* 2000 Aug 3;343(5):332-6.
5. Suissa S, Ernst P, Kezouh A. Regular use of inhaled corticosteroids and the long term prevention of hospitalization for asthma. *Thorax* 2002 Oct;57(10):880-4.
6. Spitzer WO, Suissa S, Ernst P, et al. The use of beta-agonists and the risk of death and near death from asthma. *N Engl J Med* 1992 Feb 20;326(8):501-6.
7. Eisner MD, Lieu TA, Chi F, et al. Beta agonists, inhaled steroids, and the risk of intensive care unit admission for asthma. *Eur Respir J* 2001 Feb;17(2):233-40.
8. Smith DH, Malone DC, Lawson KA, Okamoto LJ, Battista C, Saunders WB. A national estimate of the economic costs of asthma. *Am J Respir Crit Care Med* 1997 Sep;156(3 Pt 1):787-93.
9. Farber HJ, Capra AM, Finkelstein JA, et al. Misunderstanding of asthma controller medications: association with nonadherence. *J Asthma* 2003 Feb;40(1):17-25.
10. Farber HJ. Risk of readmission to hospital for pediatric asthma. *J Asthma* 1998;35(1):95-9.
11. Farber HJ, Oliveria L. Trial of an asthma education program in an inner-city pediatric emergency department. *Pediatric Asthma, Allergy & Immunology* 2004 Jul 1;17(2):107-15.
12. Lieu TA, Finkelstein JA, Lozano P, et al. Cultural competence policies and other predictors of asthma care quality for Medicaid-insured children. *Pediatrics* 2004 Jul;114(1):e102-10.
13. Clark NM, Gong M, Schork MA, et al. Impact of education for physicians on patient outcomes. *Pediatrics* 1998 May;101(5):831-6.
14. Norcross JC, Prochaska JO. Using the stages of change. *Harv Ment Health Lett* 2002 May;18(11):5-7.
15. Zimmerman BJ, Bonner S, Evans D, Mellins RB. Self-regulating childhood asthma: a developmental model of family change. *Health Educ Behav* 1999 Feb;26(1):55-71.
16. Prochaska JO, Velicer WF. The transtheoretical model of health behavior change. *Am J Health Promot* 1997 Sep-Oct;12(1):38-48.
17. Fiore MC, Bailey WC, Cohen SJ, et al. Clinical practice guideline. Treating tobacco use and dependence [monograph on the Internet]. Washington (DC): US Department of Health and Human Services, Public Health Service; 2000 [cited 2004 Oct 6]. Available from: [www.surgeongeneral.gov/tobacco/treating\\_tobacco\\_use.pdf](http://www.surgeongeneral.gov/tobacco/treating_tobacco_use.pdf).
18. Blessing-Moore J. Does asthma education change behavior? To know is not to do. *Chest* 1996 Jan;109(1):9-11.