

## Compliance and Treatment Adherence

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### Learning Objectives

- Explain how patient understanding impacts adherence
- Relate how economic reality impacts the ability to comply
- Learn what we can do to improve adherence in our asthma patients

### Medication adherence



*"The degree to which the person's behavior corresponds with the agreed recommendations from a health care provider."*  
– World Health Organization

### Definitions of Adherence and Compliance

- Adherence is the term used to describe the patient's behavior of taking medications correctly – in the right dose, with the right frequency, and at the correct time
- *A critical aspect of adherence is the patient's involvement in deciding whether or not to take the medications*
- Compliance means the patient does what he or she has been told to do by the doctor/pharmacist

### Types of Nonadherence

- Erratic nonadherence—patient forgets to take medication
- Unwitting nonadherence—patient does not fully understand the specifics of the regimen or the necessity for adherence
- Intelligent nonadherence—patient purposely alters, discontinues, or even fails to initiate therapy over concerns about side effects, lack of symptoms, bad taste, or lifestyle changes

World Health Organization. Adherence to long-term therapies: evidence for action. Available at: [www.who.int/artwhoreport.pdf](http://www.who.int/artwhoreport.pdf)

### Medication Nonadherence Encompasses Many Kinds of Patients and Medication-Taking Behaviors

Non-fulfillment

- Patients who do not go to the pharmacy to pick up a new prescription<sup>1</sup>

Non-persistence

- Patients who stop taking a prescribed drug without the advice of their health care provider<sup>1</sup>

Improper Use

- As widely reported in the literature, patients may not follow the drug's usage instructions (eg, taking a drug less frequently than prescribed, taking an extra dose or lower-than-prescribed dose)<sup>2</sup>

1. Gaskari AS et al. *Curr Med Res Opin*. 2010;26:683-705. 2. Osterberg L et al. *N Engl J Med*. 2005;353:487-497.

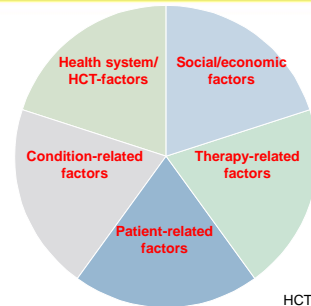
## Nonfulfillment and Nonadherence Epidemics: "A Worldwide Problem of Striking Magnitude"<sup>1</sup>

- Nonfulfillment and nonadherence
  - Transcend geographic and political boundaries<sup>2</sup>
  - Are observed across all demographic groups<sup>2</sup>
  - Are observed across all therapeutic areas and all medications<sup>2,3</sup>
  - Have rates that have not changed appreciably over the last 25 years<sup>4</sup>

1. World Health Organization. <http://www.who.int/publications/2003/924154982.pdf>. Accessed February 2, 2011. 2. McMorrey CA, et al. *Clin Ther*. 2009;31:2584-2607.  
3. McMorrey CA et al. *Health Expectations*. 2010. doi:10.1111/j.1369-7625.2010.00519.x. 4. van Dijk L, et al. *BMC Health Serv Res*. 2007;7:1-12.

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## The Five Dimensions of Adherence



HCT = healthcare team  
WHO. Adherence to Long-term Therapies: Evidence for action. WHO. 2003

## Adherence: Social/Economic Factors

- Age
- Race
- Gender
- Poverty
- Illiteracy/Education level
- Unstable living conditions/homelessness
- Social upheavals (wars, natural disasters)
- Distance from treatment centers
- Costs related to care



WHO. Adherence to Long-term Therapies: Evidence for action. WHO. 2003

## Healthcare Team/System-Related Factors

### Factors that affect adherence:

- Lack of awareness and knowledge about adherence
- Lack of skills/tools to assess adherence and address poor adherence
- Lack of skills/tools to assist with patient behavioral change
- Poor communication between healthcare team and patients
- Lack of access to care
- Gaps in provision of care

WHO. Adherence to Long-term Therapies: Evidence for action. WHO. 2003

## Therapy and Condition-Related Factors

### Factors that affect adherence:

#### Therapy

- Dosing frequency
- Side effects

#### Condition

- Effects of symptoms
- Lack of symptoms
- Effects on patients functional status
- Associated depression



WHO. Adherence to Long-term Therapies: Evidence for action. WHO. 2003

## Adherence: Patient Factors

### Adherence:

- Age, gender
- Race/ethnicity
- Understanding of disease and effects of treatment
- Cultural belief systems
- Altered mental status (substance abuse, mental illness, other illnesses)

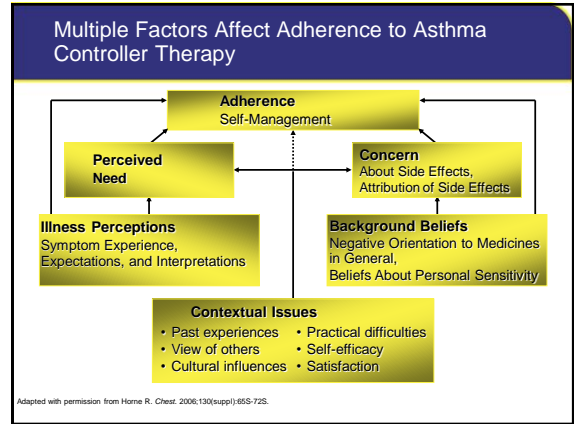


WHO. Adherence to Long-term Therapies: Evidence for action. WHO. 2003

### Nonadherence Is a Significant Issue in Asthma

- Nonadherence can be defined as lack of compliance to a prescribed course of treatment, and can include:
  - Taking an incorrect dose
  - Not filling prescriptions
  - Not taking all prescribed doses
  - Taking medication at the wrong times
  - Premature medication discontinuance
- Extensive research has found that nonadherence to asthma therapy is widespread and is a significant risk factor for morbidity and mortality
  - Yearly, almost 50% of asthma prescriptions are not taken as prescribed
  - Not filling initial prescriptions ranges from 6% to 44%

Kelly HW. P&T Digest. 2005;14:43-47.  
World Health Organization. Adherence to long-term therapies: evidence for action. Available at: www.who.int/arti/whoreport.pdf.



### Importance of Illness Perception as a Determinant of Adherence

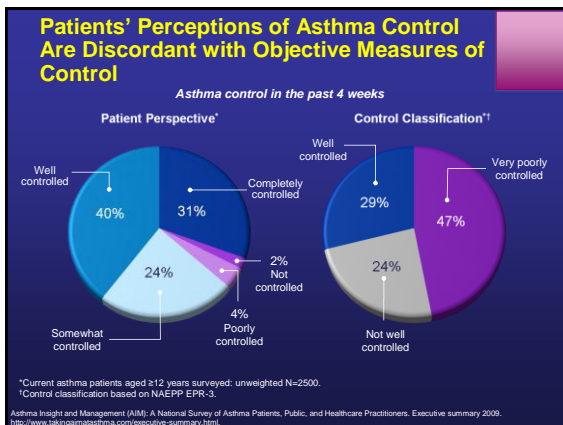
Patients are more likely to be . . .	If they . . .
Adherent to ICS therapy	<ul style="list-style-type: none"> <li>Share the "medical view" that asthma is a chronic disease with acute symptomatic flare-ups</li> </ul>
Nonadherent to ICS therapy	<ul style="list-style-type: none"> <li>Do not perceive that asthma is a chronic disease with serious consequences</li> <li>Have episodic disease, which is at odds with the concept of a chronic condition</li> </ul>

Home R. Chest. 2006;130(suppl):65S-72S.

### The Cost of Nonadherence to Asthma Therapy

- The economic burden of hospitalization as a result of nonadherence to controller therapy exceeded \$1.6 billion in 2002
- Patients with severe asthma are at greater risk for nonadherence because they require more medication to control symptoms, and are prone to secondary complications
- Asthma exacerbations may be more common in some nonadherent patients
  - In a study of pediatric patients with mild-to-moderate persistent asthma, inappropriate reliance on relievers and insufficient use of controllers were common, leading to inadequate control in 64.3% of patients

Kelly HW. P&T Digest. 2005;14:43-47.  
Lozano P et al. Arch Pediatr Adolesc Med. 2003;157:81-88.



### Methods of Measuring Adherence

- Direct methods
  - Directly observed therapy
  - Measurement of the level of medicine or metabolite in blood
  - Measurement of the biological marker in blood
- Indirect methods
  - Patient questionnaires, self-reports, and diaries
  - Pill counts
  - Rates of Rx refills
  - Assessment based on patient's clinical response
  - Electronic medication monitors
  - Measurement of physiological markers

Osterberg L, Blaschke T. N Engl J Med. 2005;353:487-497.

## Pediatric Considerations in Medication Adherence

- In the care of pediatric patients, there are often 3 parties to the doctor-patient interaction
- The challenge of a pediatric patient's adherence to medication depends on age
  - Infants and young children: Parents must be responsible for treatment
  - Older children and adolescents: With increasing age of the child, responsibility starts to shift or be shared, and this can lead to conflict

*Parental (or family/caregiver) involvement is an integral part of adherence*

DeCicca, M et al. Children's Health Care. 2005;34:19-34.

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## Challenges in Pediatric Medication Adherence<sup>1</sup>

### Infants and Young Children

- Parents may have heightened concerns about medication<sup>1</sup>
- Difficulty in administering<sup>2</sup>
- Timing of doses<sup>2</sup>

### Adolescents<sup>2</sup>

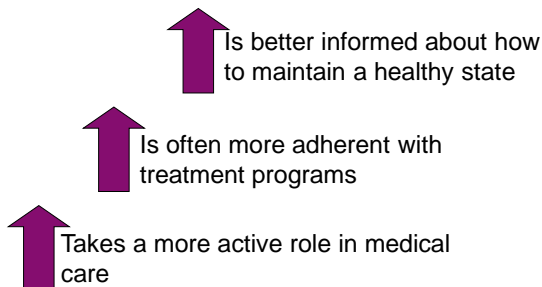
- Adherence can be affected by peer influence and stigma
- Concern about potential adverse events (particularly cosmetic effects)
- Hectic schedules

1. DeCicca M et al. Children's Health Care. 2005;34:19-34.  
2. Mauer D. PEDIATRICS. 2007;120:203-208.

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## The Educated Patient

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## Improving Adherence to Asthma Therapy

- Establish a partnership with patients in the planning process
- Create open, communicative, nonjudgmental relationships with patients
- Simplify the treatment regimen when appropriate
- Ensure that the patient understands the prescribed therapy
- Adopt methods to prompt patients who are on chronic therapy
- Collaborate with other health care professionals to improve patient outcomes
- Develop a system for recurrent reviews and ongoing monitoring of adherence

Kelly HW. P&T Digest. 2005;30(11):43-47.

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## Conclusions

- There are numerous factors that led to poor adherence in the treatment of asthma treatments
- We need to do a better job in educating patients about their conditions and understand abilities to of patients to afford their medications

**“Drugs don’t work in patients who don’t take them.”**

C. Everett Koop, M.D.  
Former Surgeon General of the US

Osterberg & Blaschke, 2005, “Adherence to Medication” NEJM.