



## OVERVIEW

### BIG IDEA

Many factors on the individual, family, organization and policy level influence whether or not patients will take medications appropriately.

### OBJECTIVE

**8.7:** Identify factors that influence patient medication adherence.

### AGENDA

1. Prescription Drug Use Trends
2. AMA Health Literacy Video
3. Snapshot of Medication Adherence
4. Dimensions of Non-adherence
5. 12 Questions to Ask About Your Med

### HOMEWORK

Brainstorm what health providers can do about the health literacy and medication non-adherence problem. Make a list of recommendations and choose one to explain.

# LESSON 8.7

# Medication Adherence

### SUMMARY:

In this lesson, students will tackle two related, but complex topics--health literacy and medication adherence. First students will examine prescription drug use trends and notice a rates of medication usage over time. Then students will watch an eye-opening video featuring patients who discuss how their literacy impacted their health. Next, students will review statistics on medication non-adherence. Finally, students will review factors that make up various dimensions of non-adherence and examine a resource listing recommended questions to ask a physician about medication.

### STANDARDS:

**NHES 1.12.6:** Analyze the relationship between access to health care and health status.



# Medication Adherence

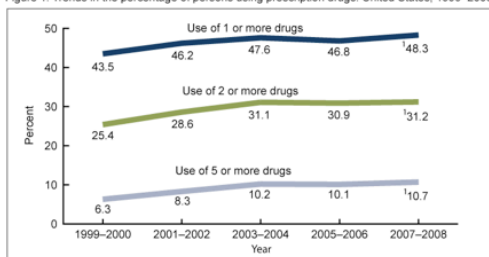
Obj. 8.7: Identify factors that influence patient medication adherence.



## Prescription Drug Use Trends

Analyze the graph to answer the questions below.

Figure 1. Trends in the percentage of persons using prescription drugs: United States, 1999–2008



\*Significant linear trend from 1999-2000 through 2007-2008.  
NOTE: Age adjusted by direct method to the year 2000 projected U.S. population.  
SOURCE: CDC/NCHS, National Health and Nutrition Examination Survey.

Source: CDC (<http://www.cdc.gov/nchs/data/databriefs/db42.htm>)

1. Explain the trend in prescription drug use from 1999-2008.
2. What percentage of the population used **five or more** drugs in 2007-08?
3. What percentage of the population uses **no** prescription drugs in 2007-08?
4. Which population shown in this graph increased the most between 1999 and 2008?



## AMA Health literacy video

Watch the video, "Health Literacy" by the American Medical Association. Afterwards, reflect upon the health literacy of patients who spoke on the video by answering the questions below:

1. How did their literacy level impact their health & lives? (Give a few specific examples)
2. What could the health professionals could have done to help these patients?

### DO NOW: Answers:

1. Steadily increasing
2. 10.7 percent
3. 51.7 percent (100-48.2)
4. Use of 2 or more drugs

**THINK:** Video source: AMA Health Literacy Short Version, Run time: 4:31 (<https://www.youtube.com/watch?v=BgTuD7I7LG8>)

A longer version of the video (run time: 23:18) is an excellent learning tool for this lesson, if time permits. It can be found at: [https://www.youtube.com/watch?v=cGtTZ\\_vxjyA](https://www.youtube.com/watch?v=cGtTZ_vxjyA)



**DISCUSS**

**A Snapshot of Medication Adherence**

With a partner, review the following statistics. Then discuss the implications of the problems presented together.

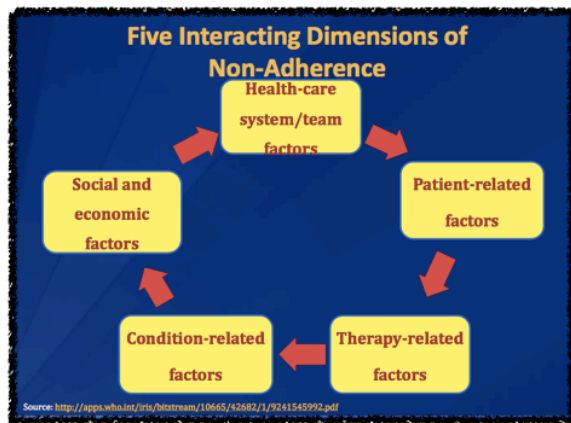
- 20-30% of medication prescriptions are never filled.
- In about 50% of cases, medication is not continued as prescribed
- The World Health Organization estimated that by 2020, the number of Americans affected by at least one chronic condition requiring medication therapy will grow to 157 million  
Source: <http://scriptyourfuture.org/wp-content/themes/cons/m/release.pdf> ; Osterberg 2005, NEJM; Ho 2009, Circulation
- Rates of medication adherence typically drop after the first six months
- Only 51% of Americans treated for hypertension are adherent to their long-term therapy  
Source: Choudhry 2011, N Engl J Med; Yeaw 2009, J Manag Care Pharm; Script Your Future press release, November 2, 2011; accessed here: <http://scriptyourfuture.org/wp-content/themes/cons/m/release.pdf>.
- Non-adherence is estimated to cost \$2000 per patient in physician visits annually  
Source: Ho 2009, Circulation; Levine et al. 2013, Annals of Neurology

Statistics from CDC (<http://www.cdc.gov/primarycare/materials/medication/docs/medication-adherence-01ccd.pdf>)

**NEW INFO**

**Dimensions of Non-Adherence**

The Centers for Disease Control & Prevention helps to supply health care providers with evidence-based information to improve their patients health. Review the slides below, designed for primary health care providers, that focus on factors influencing non-adherence to treatment plans and medication. After each slide, pause to answer the reflection questions.



**DISCUSS:** Ask students, “What are some reasons people would get a prescription but then not fill it? How about reasons why they would get it, fill it, but then not take/continue it as prescribed?” Also ask, “Why does non-adherence cost more?”

**NEW INFO:** This set of slides is from a larger presentation on medication adherence designed for primary care educators. It is a free resources from the CDC for use in any classroom setting. Ask students how this relates to the social-ecological model.

**Source:** CDC (<http://www.cdc.gov/primarycare/materials/medication/docs/medication-adherence-01ccd.pdf>)



### Health-care Factors

#### Health-care System

- ❑ Access to care
- ❑ Continuity of care
- ❑ Patient education material not written in plain language

#### Health-care Team

- ❑ Stress of health-care visits
- ❑ Discomfort in asking providers questions
- ❑ Patient's belief or understanding
- ❑ Patient's forgetfulness or carelessness
- ❑ Stressful life events
- ❑ Lack of immediate benefit of therapy

Source: <http://apps.who.int/iris/bitstream/10665/42602/1/9241345992.pdf>

1. What are some possible reasons that patient education materials are not written in plain language?
2. Considering we live in a digital age, how would you update the Health-care system list to reflect digital rather than just written information?

### Provider Factors

- ❑ Communication skills
- ❑ Knowledge of health literacy issues
- ❑ Lack of empathy
- ❑ Lack of positive reinforcement
- ❑ Number of comorbid conditions
- ❑ Number of medications needed per day
- ❑ Types or components of medication
- ❑ Amount of prescribed medications or duration of prescription



Source: Haynes RB, Ackloo E, Sahota N, McDonald HP, Yao X. Interventions for enhancing medication adherence. Cochrane Database Syst Rev 2008;(2):CD009911

3. What factors might contribute to the lack of positive reinforcement for health care providers to take time to improve medication adherence with patients?

### NEW INFO: Possible answers:

1. Lack of time/resources in writing materials or updating them; lack of education on health literacy among the materials writers; etc.
2. Existence of websites, social media, blogs, & apps; type of information present; literacy level or adaptability of content to various literacy levels
3. Insurance company reimbursement, patient load, lack of recognition and encouragement from colleagues supervisors, assumption that nurses or other health professionals are doing this work, etc.



### Patient, Condition, and Therapy Factors

#### Patient-related

- ❑ Physical
- ❑ Psychological



Source: <http://apps.who.int/iris/bitstream/10665/42682/1/9241545992.pdf>

#### Condition- and therapy-related

- ❑ Complexity of medication
- ❑ Frequent changes in regimen
- ❑ Treatment requiring mastery of certain techniques
- ❑ Unpleasant side effects
- ❑ Duration of therapy
- ❑ Lack of immediate benefit of therapy
- ❑ Medications with social stigma

4. Which of the condition- and therapy-related factors do you think an older patient with dementia would be most affected by?

### Economic and Social Factors

#### Economic

- ❑ Health insurance
- ❑ Medication cost



Source: <http://apps.who.int/iris/bitstream/10665/42682/1/9241545992.pdf>

#### Social

- ❑ Limited English proficiency
- ❑ Inability to access or difficulty accessing pharmacy
- ❑ Lack of family or social support
- ❑ Unstable living conditions

5. What specific patient or environmental factors would make a patient prone to the factor of "inability to access or difficulty accessing pharmacy"?

### NEW INFO:

4. Answers will vary (complexity and frequent changes should be mentioned; dementia patients may not remember complex, frequently changing pill or treatment regimens!)

5. Lack of mobility/handicap; lack of transportation; safety of neighborhood, etc.

Source: All slides shared with permission by the CDC (<http://www.cdc.gov/primarycare/materials/medication/docs/medication-adherence-01ccd.pdf>)



### 12 Questions to Ask About Your Med

Read the handout and answer the questions below.

1. Assume a patient DID NOT ask any of these questions and stopped taking their medication after one week. List at least **THREE** reasons they may have stopped:
  
2. Which of these questions do you think **physicians** are LEAST LIKELY to voluntarily explain (without the patient asking) during a visit? Which are **pharmacists** LEAST LIKELY to routinely explain?
  
3. Assuming a patient did not print this guide and bring it to their visit, they may think of some questions when they get home or after they begin taking the medication. What can be done to ensure patients have an opportunity to ask questions, access information, and get answers AFTER the initial physician and pharmacy visits?

Source: Script Your Future (<http://www.scriptyourfuture.org/file/4dc82f61134a7.pdf>)



### Patient Scenario

Mr. Smith is an elderly man with mild dementia. He is taking seven medications and stores them in his bathroom medicine cabinet, which is cluttered with bottles, some of which are several decades old and expired. Mr. Smith doesn't have any family nearby, but his neighbor stops in to check on him every few days. He visits his physician once every few months to get his diabetes and high blood pressure checked. When these visits occur, there are often minor tweaks to his medication regimen.

List at least **THREE** factors that influence Mr. Smith's medication adherence:



### Brainstorm Solutions

What can health providers do about the health literacy and medication non-adherence problem? Come up with a list of recommendations. Then choose one of your ideas and write a detailed explanation (at least one paragraph long).

**READ:** The website [www.scriptyourfuture.org](http://www.scriptyourfuture.org) has a number of excellent resources on prescription medications, medication adherence, health literacy, and more! Direct students to this site during the upcoming case studies!

**ASSESS: Possible answers**  
*Health-care team:* Patient's forgetfulness  
*Provider factors:* # of comorbid condition; # meds needed per day  
*Patient/Condition factors:* complexity & changes in treatments  
*Social:* lack of family support

**HOMEWORK:** The purpose of this homework assignment is to have students expand upon their understanding of the problems of health literacy & medication adherence by working toward solutions.