



City Health Information

July 2009

The New York City Department of Health and Mental Hygiene

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Special Issue

IMPROVING MEDICATION ADHERENCE

- For patients on medication, assess adherence and discuss possible barriers to adherence at every visit.
- Reconcile your medication list with the patient's list, adjust doses, and eliminate unneeded medications.
- Prescribe once-daily formulations, less expensive generics, and longer-lasting supplies of medicine whenever possible.
- Provide tools such as pill boxes and medication logs to help patients remember to take their medications.

Close to half of the people in the United States (US) are on medication, but many don't take their medicine as prescribed. Medication adherence—the extent to which patients follow the instructions—varies from person to person, but is typically only about 50%.^{1,2} In New York City, more than 579,000 people reported that they failed to fill a needed prescription in 2007.³

In the US, nonadherence causes one-third to two-thirds of medication-related hospital admissions^{4,5} and results in \$100 billion in direct health care costs, \$50 billion in lost productivity, and >\$1.5 billion in lost earnings.^{6,7} Nonadherence is also associated with higher treatment costs for diabetes and hypercholesterolemia.^{8,9} Risks of hospitalization and death associated with nonadherence are especially high in people with chronic illnesses such as diabetes, HIV/AIDS, and heart disease.⁹⁻¹³ Adherence of at least 80% is associated with better response to antihypertensive medications,¹⁴ and 95% adherence is needed for optimal response to antiretroviral therapy.¹³ Despite this, 17% of patients with high blood pressure fail to fill their first prescription for antihypertensive drugs,¹⁵ and up to 45% of patients with HIV/AIDS are nonadherent with their medication regimens.¹³

Patient barriers to adherence include not understanding the rationale for the medication or dosing, adverse effects, forgetfulness, perceived lack of benefit, cost, illiteracy, lack of housing or insurance, impaired mental health, and cultural beliefs.^{6,16,17}

The health care system also contributes to nonadherence, which often goes unnoticed or unaddressed at the point of care¹⁸: providers do not always favor the least expensive and easiest-to-use drugs and often forget to ask about adherence; clinic information systems do not commonly track patient medication refills; insurance benefits often have gaps and high co-pays, which create cost barriers; and between-visit follow-up is lacking, usually because providers lack time and other resources.

Physicians, nurses, medical assistants, pharmacists, case managers, and other health care team members can all work to promote adherence by becoming aware of the barriers to medication adherence and knowing how to address them.



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IDENTIFYING NONADHERENCE

Nonadherence is difficult to predict and may not be obvious to the provider because clinical response is not a reliable indicator.^{19,20} Just asking the patient about adherence is the simplest and most direct strategy to identify nonadherence,²¹ and, in some cases, blood levels or pill counts can also help assess adherence.¹⁹ The most common reasons for nonadherence fall into three categories: communication, complexity, and cost (**Table 1**). Talk to patients about their concerns at every visit, particularly when prescribing new medication and at follow-up visits.

IMPROVE COMMUNICATION

Effective communication improves patient understanding and self-management skills.²² Explain the purpose, dosing, and possible adverse effects of each medicine and tell patients how they can expect to feel once they've begun the regimen.² Up to 25% of patients have difficulty understanding medication labels, so it is essential that you discuss medication dosing and safety during the visit and provide patients with written instructions.^{17,23} "Normalize" nonadherence by asking questions as if the patient is *not* taking the medications:^{19,24}

- Many people have trouble taking their medicines all the time. Can we take the next few minutes to talk about that?
- What gets in the way of taking your medicine?

Explain to patients why they must take all their medication even if they feel fine and why chronic conditions such as hypertension will probably require medication for life.^{2,17} Designate a contact in your office for medication questions and remind patients that the pharmacist can answer medication-related questions and provide medication labels in other languages.

MINIMIZE COMPLEXITY OF REGIMEN

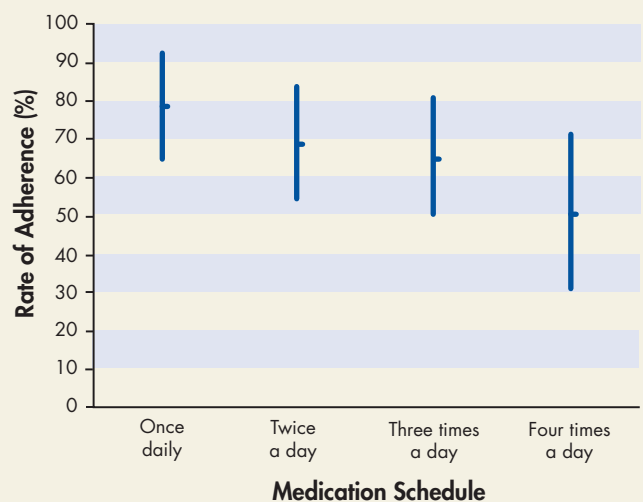
Reconcile patient medications: Use the brown-bag approach with your patients: when they call to schedule an office visit, ask them to bring all their medications with them, including over-the-counter drugs and supplements.^{25,26} Reconcile the medications with your list of what's been prescribed and how it should be taken, and assess the possibility of eliminating unneeded medications from the regimen. You may need to discuss the need for

ongoing treatments with other providers. If the patient is unable to tell you what medications he or she takes, call the pharmacy for more information.²⁷ Another option is to ask the patient to obtain a printout of his or her medications from the pharmacist to bring to the next visit.

Simplify dosing and administration schedules^{6,28}: Medication adherence is inversely proportional to dosing frequency (**Figure 1**),^{19,29} so prescribe the fewest daily doses possible.^{17,30} Changing antihypertensive regimens from twice- to once-daily dosing can increase adherence by about 8% to 20%.³¹ Longer-acting drugs may also offer the benefit of providing protection when a patient is late with a dose or misses the dose altogether.³² Because the long- and short-acting drugs may have different adverse-event profiles, it is important to carefully weigh the benefits against risks, especially in subgroups where medication excretion or metabolism may be delayed.³³

When possible, shorten the duration of treatment: in treating chlamydia, for example, a single dose of azithromycin is easier for the patient to take than a multiday antibiotic course.^{17,34} Prescribing combination pills has also been shown to increase adherence,^{35,36} but titration of the individual components may be required first. Generics that are available in combination can be started and titrated individually before you prescribe the combination agent.

FIGURE 1. MEDICATION ADHERENCE RATES BY DOSING FREQUENCY



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TABLE 1. ADDRESSING COMMON BARRIERS TO MEDICATION ADHERENCE

Patient Barrier	Provider Response
Communication	
“My meds make me feel sick.”	<ul style="list-style-type: none"> • Explain side effects that are common and tell the patient how to handle them (eg, call you or the pharmacist). If applicable, let the patient know that the medication may make a person feel worse at first, but that the side effect is expected to go away over time. • If possible, replace with another medication with a different side-effect profile. • For medications in which side effects persist, suggest ways to manage them, such as take with food (for nausea) or before bed (for dizziness) or stay well hydrated and eat a fiber-rich diet (for constipation). • Discuss the long-term benefits of taking medicine.
“I feel fine so I don’t need to take the medicine.”	<ul style="list-style-type: none"> • Explain to the patient that, unlike antibiotics, many chronic disease medications don’t make you feel different even when they are working. • Reinforce that the medication will help prevent future illness or medical complications. • Remind the patient that many silent diseases like high blood pressure or diabetes can put patients at risk for heart attack or stroke.
Complexity	
“It’s too hard to remember all those pills.”	<ul style="list-style-type: none"> • Determine whether any medications the patient is on can be safely discontinued. • Prescribe a long-acting formulation if appropriate. • Determine whether the patient can take a combination pill. • Review patient medication reminder tools (see box on page 4).
Cost	
“It costs too much.”	<ul style="list-style-type: none"> • Switch the patient to an equally effective generic or less expensive medication if possible. • Be sure that the patient is not taking unnecessary medications. • Provide prescription assistance program resources (Resources).

Simplify the refill schedule: Beginning a patient on new medicines at the same time or in close temporal proximity may enhance adherence.³⁷ Encourage patients who take several medications to use one pharmacy and to ask the pharmacist to synchronize their prescriptions. The pharmacist can dispense medications in the amount needed to bring all the prescriptions into the same refill cycle, making it much easier for the patient to manage the medications.

Prescribe a long-lasting supply: Minimize the need for patients to order refills. Once the medication regimen has been established, prescribe a 90-day supply with refills, if allowed by the patient's insurance.

ASK ABOUT COSTS

Cost can force patients to skip pills or stop taking them completely.^{38,39} Ask patients, "Have you cut back on any of your medications due to cost?"⁴⁰ One-third of adults who underuse medications due to cost do not raise this issue with clinicians; this is especially true of low-income and minority patients.³⁸ Prescribe the least expensive, equally effective generics to all patients where possible; this has been shown to improve adherence.⁴¹ Expensive drugs are not necessarily better; often (but not always) the least expensive drug is the most effective first-line agent (eg, metformin for diabetes or thiazide diuretics for hypertension).⁴² Offer patients information about prescription assistance programs and less costly sources for their medications³⁸ (**Resources**).

OTHER CONSIDERATIONS

Certain medical conditions are associated with decreased adherence. Patients with depression are three times more likely to be nonadherent,⁴³ especially those who also have diabetes.⁴⁴ Identifying and managing depression improves adherence and health outcomes. See "Detecting and Treating Depression in Adults" for information on managing depression (www.nyc.gov/html/doh/downloads/pdf/chi/chi26-9.pdf).⁴⁵ Decreased adherence to medication for other conditions was also found in patients who misuse alcohol⁴⁶ or have chronic obstructive pulmonary disease, asthma, or osteoarthritis¹⁸; patients with alcohol problems or any of these comorbidities may need closer follow-up. When possible, work with case managers to improve medication adherence in patients with complex

problems such as substance use, unstable housing, or impaired mental health.

TOOLS FOR IMPROVING ADHERENCE

Another common barrier to adherence is forgetfulness⁴⁷; simple interventions can increase adherence by 4% to 11%.¹⁷ Offer patients reminder tips (see box below) and ask them which they think would be helpful to them.^{19,28,48} Ask a member of your staff to fill out a medication log with the patient (**Figure 2**). It will provide the patient with a good learning opportunity as well as a helpful reminder system (call 311 to order copies).

Patients are more likely to be adherent when they are actively participating in their care.²⁴ Encourage patients to take part in the decision-making process and teach them skills they need to manage a chronic disease. For patients with hypertension, home self-monitoring of blood pressure may improve adherence to medications.⁴⁹ Refer patients with chronic illnesses to self-management programs if feasible.

PATIENT MEDICATION ADHERENCE TOOLS






- Take medicine at the same time as another daily activity, eg, brushing teeth, watching the news.
- Keep medication in an easily accessible place, although be mindful if children are in the home.
- Use a pill box and medication log.²⁸
- Ask the pharmacy for reminder packaging, ie, blister packs (for those with very complex regimens)—although there may be additional associated costs.⁴⁸
- Set a cell phone or watch beeper as a reminder.¹⁹
- If possible, use one pharmacy with a refill reminder system to fill all medications. This helps the care team keep track of your adherence, too.
- Update medication log at every doctor visit.
- Ask pharmacy to provide medication labels in your preferred language.

FIGURE 2. PATIENT MEDICATION LOG

My Medication Log – Keep it Handy

- List all prescriptions, over-the-counter drugs, vitamins and herbs.
- Bring this to every doctor's appointment and if you go to the emergency room or hospital.

Date: _____

Name and Dose of Your Medicine	This Medicine is for my _____	How Much and How Often?				Reminder: When do I take it? 
		Morning 	Noon 	Evening 	Bedtime 	
Example: Hydrochlorothiazide 25 mg	Example: High blood pressure	Example: 1 pill				Example: After I brush my teeth

If you have any problems with your medicine – do not wait. Talk to your health care provider right away.

Patient Name: _____ Name of Primary Care Provider: _____ Primary Care Provider Phone Number: _____

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Some pharmacies have free medication refill reminder systems that make adherence easier for the patient to achieve and for the provider to track. Electronic health records have the potential to support medication adherence by allowing physicians to track medication history and pharmacy refill data and to determine which medications are preferred by the patient's health plan.⁵⁰

SUMMARY

Nonadherence to medication regimens is a common problem that increases morbidity and

risk of hospitalization and death. Physicians, pharmacists, nurses, medical assistants, and care managers can all play a part in supporting patient adherence. In a nonjudgmental manner, ask all patients how they take their medications and address any barriers to adherence that exist. Make adherence easier for patients by routinely prescribing the simplest, least expensive medication regimen possible. Provide practical advice, such as using medication logs, pill boxes, and a pharmacy with a refill reminder system, to help patients remember to take their medications. ♦

RESOURCES

General Information

- National Council on Patient Information and Education (NCPPIE): www.talkaboutrx.org
- Health Bulletin #55: Taking Your Medicine: www.nyc.gov/html/doh/downloads/pdf/public/dohmhnews6-09.pdf
- NYC DOHMH Electronic Health Records (EHRs) Action Kit: www.nyc.gov/html/doh/html/csi/csi-ehrkit.shtml

Low-Cost Prescription and Insurance Resources

- NYC Rx: Low-cost prescription drugs for patients at select NYC sites: www.nycrx.org/home
- Partnership for Prescription Assistance: 888-477-2669 www.pparx.org
- Consumer Reports Best Buy Drugs: www.consumerreports.org/health/best-buy-drugs/index.htm
- New York State Elderly Pharmaceutical Insurance Coverage Program (EPIC): 800-332-3742 www.health.state.ny.us/health_care/epic/index.htm

- New York State Department of Health Prescription Drug Price Web site: Search for lowest price on medications: <http://rx.nyhealth.gov/pdpw>
- Several pharmacy chains offer low prices on some generic drugs. Check prices on the Web or compare with community pharmacies to find the best options for specific medicines.
- Salud a Su Alcance Pharmacy Assistance Program (SASA-PAP) (for patients whose insurance does not cover all medications): 212-342-1617
- Healthy New York: Helps working, uninsured people access health insurance:
English: www.ins.state.ny.us/website2/hny/english/hny.htm
Spanish: www.ins.state.ny.us/website2/hny/spanish/hnys.htm

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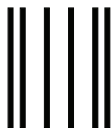
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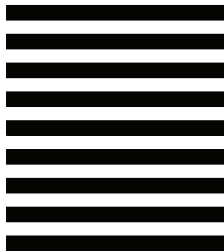
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Objectives

At the conclusion of the activity, the participants should be able to:

1. Know how to ask patients about adherence.
2. Be able to address common barriers to adherence.
3. Be able to give suggestions and resources for improving adherence.

CME Accreditation Statement

The New York City Department of Health and Mental Hygiene is accredited by the Medical Society of the State of New York to sponsor continuing medical education for physicians. The New York City Department of Health and Mental Hygiene designates this continuing medical education activity for a maximum of 1.0 AMA PRA Category 1 credit(s).™ Each physician should only claim credit commensurate with the extent of their participation in the activity.

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CME/CNE Activity

1. Barriers to adherence include:

- A. Complexity of regimen.
- B. Not understanding disease.
- C. Side effects.
- D. All of the above.

2. Your 50-year-old patient with hypertension was started on dual therapy 1 year ago. You have since increased his medications to maximum dosage and added a third agent. However, his blood pressure remains at pre-treatment levels. You suspect medication nonadherence, and when asked, he tells you that he doesn't take his medications regularly. What should you do next?

- A. Consider prescribing a self-blood pressure monitor to help him learn more about his blood pressure between visits.
- B. Encourage the patient to also consider his pharmacist as a source for medication-related questions.
- C. Help the patient make a plan to take his medicine.
- D. All of the above.

3. When prescribing a new medication for a patient, providers should expect the patient to understand how to take the medicine by reading the written instructions.

- A. True
- B. False

Improving Medication Adherence

July 2009

4. Simple ways in which providers can improve patient adherence include:

- A. Reconciling medication (and OTCs) at every visit.
- B. Simplifying the medication regimen.
- C. Asking (in a nonjudgmental manner) about adherence at every visit.
- D. All of the above.

5. How well did this continuing education activity achieve its educational objectives?

- A. Very well.
- B. Adequately.
- C. Poorly.

6. Will the content learned from this activity impact your practice?

- A. Yes.
- B. No.
- C. Not applicable.

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