

## PROFESSION



[Illustration by Gilbert Ford / www.gilbertford.com]

### Tactics to improve drug compliance

After a drug is developed, approved and prescribed, the patient should take the medicine, but it isn't that easy. These strategies can help.

By **KEVIN B. O'REILLY**, *amednews* staff. *Posted Oct 3, 2011.*

For months, Lars Osterberg, MD, MPH, struggled with a patient whose blood pressure seemed to fluctuate randomly. The man was on three antihypertensive medications, and Dr. Osterberg was thinking of adding another. It took several office visits and rapport-building with the patient to deduce the source of the problem.

The man confessed that he had a daily routine before taking his medicines. He used a dowsing rod -- a long-debunked tool that purports to identify the presence of water, metals or minerals -- near the drugs to determine whether they were "safe" to take that day.

Dr. Osterberg warned the patient about the potentially fatal consequences of his drug-taking strategy. The patient then monitored his blood pressure at home, reinforcing the short-term effects of skipping his medicines, and his hypertension eventually improved.

Working with noncompliant patients isn't easy, says Dr. Osterberg, chief of general internal medicine at the Veterans Affairs Palo Alto Health Care System in California. "It takes an awful lot of compassion and patience and understanding," he says.

One-third of prescriptions are never filled, and patients with chronic conditions are noncompliant about half the time, studies show. There is no foolproof solution to the pervasive problem of medication nonadherence, because it has no single cause.

Some noncompliant patients have trouble affording medications, while others have difficulty remembering to take them. Many do not understand the medical benefit of the drugs or the nature of the conditions for which they are being prescribed. And some patients have personal beliefs -- in the efficacy of dowsing rods, for instance -- that interfere with compliance.

Although the problem is vexing, several promising new tactics are helping patients follow their medication regimens.

### Spotting noncompliance

Identifying nonadherent patients is the first challenge. Noncompliant patients often are reluctant to discuss their concerns about medication side effects or costs, and physicians simply might assume that they are taking the drugs as prescribed.

Physicians working in the Geisinger Health System in Pennsylvania have electronic access to their patients' prescription refill records from the previous month as part of a pilot program launched in February. The program tells

physicians how often the patient filled a prescription in the last year and prompts them to discuss any refill gaps.

Another new effort at Geisinger employs touch-screen technology to ask patients questions about their preferences and beliefs regarding medications, which can affect adherence rates. For example, patients who say they do not believe drugs are important in controlling hypertension might be referred for educational counseling with a midlevel health professional.

Geisinger also takes a preventive approach, assigning a nurse case manager to provide regular check-ins by phone to patients with six or more chronic conditions, says Thomas Graf, MD, associate chief medical officer of population health at Geisinger.

"Those nurse case managers go through, at a very personal level, a lot of the issues that might affect adherence -- cost issues, medical understanding, the availability of a pharmacy, the use of pill boxes and other prefilled things to facilitate patient use," he says. "They will work with family and other caregivers to make sure those things are understood."

Though it is too early for Geisinger to report any improvement on medication adherence, the system has seen a 500% improvement in helping patients with diabetes meet their goals on cholesterol, blood pressure and blood-glucose levels since the nurse case manager program was implemented in 2007, Dr. Graf says. Heart attack and stroke rates among these patients also have fallen.

### **Pharmacists pitch in**

The 280-plus primary care practices that are part of Community Care of North Carolina -- a statewide Medicaid-funded medical home project -- have access to 65 pharmacists to help patients reconcile medications and address problems that contribute to noncompliance. The pharmacist service has been a great aid, says family physician Ed Bujold, MD, whose solo practice is at the foothills of the Appalachian Mountains in Danville, N.C.

"We all think that because we write the prescription that people are going to take it, which isn't the case at all," he says. "Then we need to find out why that's not happening, particularly with people who have multiple chronic diseases.

"[The pharmacist] was able to call on the phone or bring people into the office, and she could spend an hour or two interviewing, researching, looking at medication fill rates. She can talk with diabetic patients, for example, about what their numbers should be and why it's important to take medications and what the consequences could be -- blindness, heart attacks, loss of limbs, kidney failure. She can spend an hour or two where we can't. We just don't have that kind of time."

Such efforts have resulted in a 12% improvement in medication adherence rates at Community Care of North Carolina clinics, says Troy Trygstad, PharmD, who directs the project's pharmacy programs. The complexity and redundancy of drug regimens contribute to noncompliance, he says.

"Those are called drug misadventures in my line of work," Trygstad points out. "Rather than having 15 drugs for which the patient is semi-adherent, we try to knock it down to eight drugs to which the patient is regularly adherent. That's at the core of what we're trying to accomplish."

### **The cost equation**

Out-of-pocket costs also discourage patients from filling prescriptions. Each \$10 increase in co-pays is associated with a 10% increase in noncompliance, says Niteesh Choudhry, MD, PhD, associate physician in the Division of Pharmacoepidemiology and Pharmacoeconomics at Brigham and Women's Hospital in Boston.

Dr. Choudhry co-wrote a November 2010 *Health Affairs* study showing that patients with no co-pays for cholesterol-lowering statins had a 2.8% higher compliance rate than those who paid out of pocket. Patients who saw co-pays for a clot-busting drug reduced had a 4% higher adherence rate, said the study, which looked at the experience of more than 50,000 patients employed by the same firm.

Other studies have shown that eliminating out-of-pocket costs can improve compliance rates by as much as 8%, which may not sound like a lot but could pay off if enough of those patients avoid hospitalization, Dr. Choudhry says. In a January/February 2007 *Health Affairs* study, Dr. Choudhry and his co-authors estimated that doing away with cost-sharing for ACE inhibitors, beta-blockers, aspirin and statins for patients who had heart attacks would cut mortality and heart attack rates while saving nearly \$6,000 per patient. In November, he will report the results of a nationwide trial of eliminating co-pays for cardiovascular disease drugs among more than 5,000 patients covered by Aetna.

"We shouldn't have any illusions that eliminating patients' drug costs will fix the adherence problem all by itself," Dr. Choudhry says. "But we should begin attacking this problem by thinking about the low-hanging fruit, and cost may be low-hanging fruit."

### **High-tech adherence**

Most noncompliance is due to patients' intentionally forgoing medication, but new technologies could help patients who are forgetful or misunderstand instructions. These include seemingly obvious fixes, such as easier-to-understand prescription-bottle labels and drug packaging that separate pills by when they should be consumed -- the way that birth-control pills are labeled.

More than 6,000 patients are using the \$75-a-month Philips Medication Dispensing Service targeted for people with mild to moderate dementia, early-stage Alzheimer's disease, brain injury, mental illness or other conditions that make it difficult to stay on top of a drug regimen.

A family member or other caregiver loads up and programs the device. When medication time comes, the machine's robotic voice loudly reminds the patient. The alert continues for 90 minutes, or until a button is pressed to dispense the medication in a plastic cup. If the button is not pressed, the system automatically calls the designated caregiver. The documented adherence rate is 98%, the company says.

Involving families or other caregivers also is key to systems designed by CareSpeak Communications. The East Brunswick, N.J., firm's Mobile Medication Manager reminds patients by text message to take their medications. Patients also are asked to confirm by text message that they have done so.

Responses are logged electronically and are available to the physician. If the patient does not confirm taking the medication, designated family members are alerted. In an Oct. 12, 2009, *Pediatrics* study of 41 teenage liver transplant recipients, compliance with the immunosuppressant regimen was 69% among patients using the CareSpeak service compared with 48% for those who did not.

Automated reminders are one of the tools made available to patients as part of the Script Your Future campaign launched in May by the National Consumers League in partnership with the American Medical Association and more than 100 other organizations. Visitors to the campaign's website can sign up to receive free cell phone text reminders on a daily, weekly or monthly basis.

Another technology that soon could be seen in clinical practice is the so-called tattletale pill. This "smart pill" has embedded, ingestible microchips that are activated by stomach acids once swallowed and will then send emails or text messages to alert physicians or caregivers. Swiss drugmaker Novartis plans to seek regulatory approval for the technology in spring 2012. Several other firms are working on the idea.

Whether the strategy involves taking a team approach to care, cutting co-pays or high tech, seriously targeting noncompliance is long overdue, experts say.

"Improving medication adherence is a highly efficient strategy for doing quality improvement," says Dr. Choudhry, assistant professor of medicine at Harvard Medical School in Massachusetts. "We don't need to pay to get a new drug developed or a new therapy prescribed. We just have to find a way to get people to take the medications they've already been prescribed."

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#### ADDITIONAL INFORMATION:

### Tips on talking about adherence

How physicians communicate with patients about medications can have a decisive impact on adherence, experts say. Yet physicians often fall short in squeezing drug information into patient visits. Here are some tips on how to encourage compliance and find out if patients are having trouble taking medications.

- Assess the likelihood of noncompliance by using validated tools such as the Morisky medication adherence questionnaire. The free online survey elicits information about how forgetful patients are, whether they believe they can stop medications once symptoms are controlled, and whether they feel "hassled" about following treatment. Counsel high-risk patients.
- When prescribing a new drug, explain the purpose of the medication, the name, anticipated adverse effects, frequency of administration and dosing. Have patients "teach back" the information and ask questions about what they do not understand.
- Follow up with patients, asking about medicine-taking occasionally. Also, ask about adherence if the drug does not seem to be having the expected clinical effect, as that may be due to noncompliance.
- Normalize and empathize with potentially noncompliant patients to encourage forthcoming responses. One way to phrase the question might be: "It's really hard to take medicine every day, and you're on a lot of medicines. I know that I sometimes miss a dose. Tell me: How are you doing taking your medications?"
- Stress the effects of failing to take medications. Patients respond strongly to messages about the health consequences of noncompliance, the eventual impact on their families and the value of taking control of their illnesses.

Sources: Lars Osterberg, MD, MPH; "Physician Communication When Prescribing New Medications," *Archives of Internal Medicine*, Sept. 25, 2006; "Morisky 8-Item Medication Adherence Scale," National Cancer Institute; "Prescription Medication Adherence, Provider and Patient Perspective: Final Report," Matheus Marketing LLC, June 18, 2009

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### Noncompliance adds up fast

Failing to take medicine as prescribed is common, costly and deadly.

- 75% of patients sometimes fail to take their medications as directed.
- 33% of prescriptions are never filled.
- 50% to 60% of the time, patients with chronic conditions do not take their medications.
- 33% to 69% of medication-related hospitalizations are linked to drug nonadherence.
- 125,000 patient deaths each year are linked to drug noncompliance.
- \$290 billion is spent annually on care needed because of medication noncompliance.

Sources: "Medication Adherence: Making the Case for Increased Awareness," National Consumers League, May; "Thinking Outside the Pillbox: A System-wide Approach to Improving Patient Medication Adherence for Chronic Disease," NEHI, Aug. 12, 2009

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## WEBLINK

"Thinking Outside the Pillbox: A System-wide Approach to Improving Patient Medication Adherence for Chronic Disease," NEHI, Aug. 12, 2009

([www.nehi.net/publications/44/thinking\\_outside\\_the\\_pillbox\\_a\\_systemwide\\_approach\\_to\\_improving\\_patient\\_medication\\_adherence\\_for\\_chronic\\_disease](http://www.nehi.net/publications/44/thinking_outside_the_pillbox_a_systemwide_approach_to_improving_patient_medication_adherence_for_chronic_disease))

"Should patients receive secondary prevention medications for free after a myocardial infarction? An economic analysis," *Health Affairs*, January/February 2007 ([content.healthaffairs.org/content/26/1/186](http://content.healthaffairs.org/content/26/1/186))

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National Consumer League's Script Your Future campaign ([scriptyourfuture.org](http://scriptyourfuture.org))

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