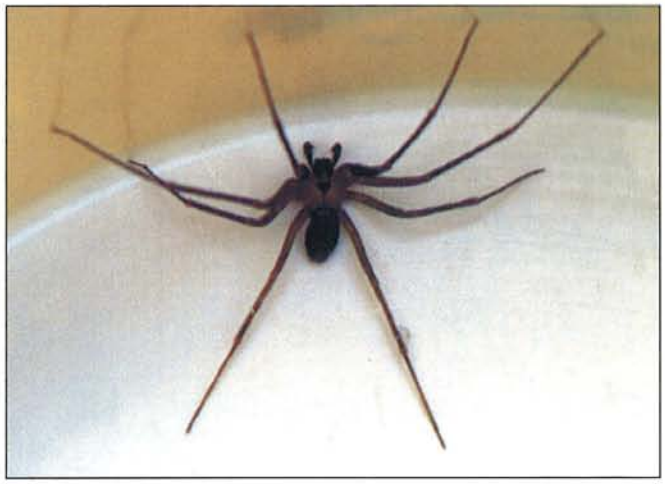

Family practice rounds, page 22

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Compliance: A physician's problem

SHIRAH VOLLMER, MD

ABSTRACT As many as half of all patients may be noncompliant with treatment regimens. This not only threatens the patient's health, but also incurs higher costs in the long run for both the patient and the health care system. The primary care physician should learn to recognize the factors that affect compliance, try to overcome them, and communicate to patients the importance of adhering to treatment regimens. Good physician-patient rapport, careful patient education, attention to the patient's opinions about therapy, and encouraging the patient's commitment to therapy all help build compliance.

> We have to cure ourselves of the itch for absolute knowledge and power. We have to close the distance between the push-button order and the human act. We have to touch people.
>
> *Jacob Bronowski*

In this quote, Mr. Bronowski makes note of the astonishing contrast between increasing health care technology and decreasing professional-patient contact. This point can best be documented by the compliance problem facing our health care system. Most studies concerned with long-term medication regimens estimate that 50% of patients do not adhere to their medication schedule,[1] which makes us question the value of advanced technology if physicians and patients are not using the data to change behavior. If the government were to pour billions of dollars into a space program only to find that scientists were not using the information, then someone would soon question the value of the information—and the program itself. Yet, when the person to receive information is the health care consumer, hardly anyone seems concerned that the data have no impact on patient care.

Diagnostic information takes four steps to go from machine to technologist to specialist to generalist to patient. The government (and taxpayers), third-party payers, and consumers spend billions of dollars ensuring that the first three steps will be performed in the most sophisticated manner. If half the information the machine gathered were lost, no one would hesitate to fund research for better technology. But when the fourth step—the physician-patient interaction—is only 50% effective, no one seems concerned. Shouldn't we question the values of a system that is more focused on

Dr. Vollmer is assistant clinical professor of family medicine and psychiatry, UCLA School of Medicine, Los Angeles.

machine efficiency than on human compliance?

One could argue that patient compliance is a patient problem. The physician has written the prescription, and the responsibility for using it lies with the patient. On the other hand, a 50% impact hardly seems to justify all the training involved in becoming a physician. Besides, such thinking blurs the issue of patient responsibility. The health care system needs to help patients implement the treatment regimen. If compliance were perceived as a symptom, and not a patient characteristic, then health professionals might try to help. Finally, if the patient does not comply with treatment, then the health care system must view it as a failure. Compliance thus becomes a problem of the health delivery system—and the physician.

Types of noncompliance

There are seven types of noncompliance beyond the usual idea that noncompliance means "not following doctor's orders." They are as follows: 1) The medication is not taken at all or stopped prematurely. Early reports found that a complete failure to take medication occurs in approximately 25%-50% of outpatients[2,3]; 2) the medication is used erroneously, which includes omitting doses, overdosing, and underdosing; 3) the medication is taken with prohibited foods, liquids, or other medications, such as taking an monoamine oxidase inhibitor with a decongestant; 4) the medication is not administered properly, a common problem with inhaled corticosteroids, for example; 5) the medication is taken at the wrong time or interval, such as taking a very sedating medication in the morning rather than at bedtime; 6) the medication taken is outdated, which can happen when the patient is out of the prescription and remembers he or she has some old antibiotics in the medicine cabinet; 7) the final form of noncompliance is not keeping scheduled appointments.

Factors influencing noncompliance

The factors influencing noncompliance can be divided into disease factors, treatment factors, social and environmental issues, health beliefs, mental illness, and the doctor-patient relationship.

• *Disease factors* Treating asymptomatic chronic conditions like hypertension, where the patient experiences no direct symptom relief from complying with the medication is a compliance challenge for the primary care physician. Similarly, when the patient's symptoms seem to be unrelated to the underlying problem such as the irritability or fatigue that is secondary to allergic rhinitis, the patient has a hard time understanding how complying with an allergy regimen will help the problem.

• *Treatment factors* These are relatively obvious. The greater the complexity of the treatment regimen, the less likely patients will comply. Further, when follow-up is inconvenient, compliance with appointments will be a challenge. The longer the duration of therapy and the more bothersome the medication side effects, the more likely patients will "forget" their medicines. Similarly, when the medication offers little symptom relief or when it is used as prophylaxis, compliance will be especially difficult. Finally, since people are reluctant to change their lifestyles, recommending a behavior change such as smoking cessation or increasing exercise is also likely to result in noncompliance.

The longer the duration of therapy and the more bothersome the medication side effects, the more likely patients will "forget" their medicines.

• *Social and environmental issues and noncompliance* Family problems are a common cause of noncompliance. Couples often undergo serious disturbances in the marital relationship when a spouse takes ill. Widowhood may create personal difficulties and family upset. Loss of social contact, lack of self-esteem, loneliness, and isolation are particularly relevant problems that stress coping skills. Patients without

adequate coping mechanisms do not organize themselves to take steps to comply with treatment regimens. It would seem that patients with multiple life adjustments are at high risk for noncompliance, but studies need to document this so that physicians will be better attuned to ensuring cooperation in this patient population.

One study found that geriatric nonadherence was highest among the widowed, followed by the single and divorced, and then the married.[4] One elderly man summarized it simply: "I think that what old people need to keep 'em from going to nursing homes is a good quiet 70-year-old woman to stay with 'em. I think that while you're living good, and got your health and strength, and you got plenty of friends, you got to pick out somebody to hold you up." Thus the physician must learn to mobilize the help of not only spouses and relatives, but also neighbors and friends, to ensure that the patient follows medication orders.

Environmental factors can also have a significant impact on preventing adherence to treatment regimens. A lack of financial resources frequently leads to noncompliance and is particularly troublesome for older Americans who must rely on a fixed income. The problem is amplified when multiple medications are needed. When money is tight, it is often the prescription drugs and not the over-the-counter (OTC) medication that is discontinued.

On a practical level, medication dispensing must also consider the functional status of the patient. Child-proof containers are often adult-proof as well. Arthritic thumbs make it quite impossible for a substantial minority of patients to remove the lids from such containers. This barrier to medication adherence illustrates that the physician must learn to think very practically when dealing with the functionally impaired patient.

• *Health beliefs as barriers to compliance* The health belief model is useful in explaining these attitudinal barriers to compliance. Part of this theory states that an individual's actions depend first on whether or not he considers himself susceptible to disease, and second on whether he believes the treatment will help him reduce that susceptibility or the severity of the disease.[5] It has been shown that health beliefs do determine cooperation and that, in general, noncompliers perceive themselves as less threatened by actual or potential illness.

Patients are more likely to be noncompliant if their expectations in seeking care are not met, if they perceive lack of warmth in the practitioner, or if they do not receive an explanation for their illness.

• *Mental illness and compliance* Depression is a major barrier to compliance. Not only does depression require additional medication, it increases the anxiety level. And when patients are extremely anxious, they do not remember what they have been told and thus cannot comply adequately. Since estimates of the prevalence of depression range from 5%-25% of primary care patients,[6] this problem significantly contributes to noncompliance.

• *The doctor-patient relationship* The quality of the health professional-patient relationship is critically important to building patient motivation. One study documented that patients are more likely to be noncompliant if their expectations in seeking care are not met, if they perceive lack of warmth in the practitioner, or if they do not receive an explanation for their illness.[7] If care is to be effective, it must have the elements of personalization and continuity. Noncompliant patients are more likely to visit two or more primary care physicians. Worse yet, fragmented care leads to duplicate prescriptions, more patient confusion, and haphaz-

ard medication habits. Third-party payers need to realize that time spent on compliance is a "procedure" worth paying for.

Giving the patient poor instructions also increases noncompliance. The doctor often gives hasty directions about the medication while the patient also receives diet instructions, information about the disease, and advice about functional limitation—and all this talk occurs while he is primarily concerned with his joint pain. Slower and more thoughtful teaching is needed to achieve compliance.

Further, most observers feel that a patient is more likely to be compliant when the practitioner strongly believes in the worth of the treatment and when he or she regularly and explicitly asks about compliance.

Not surprisingly, since physicians have poor communication skills in general, they almost always overestimate patient cooperation. In fact, practitioners do no better than chance in predicting which patients will be compliant.[8]

The authors of a 1993 study made this observation[9]: "Until recently, the content, structure, and function of communication between doctors and patients has received little attention and has been excluded from the realm of scientific inquiry; as a result, most clinicians have had little formal training in communication skills." According to another author,[10] this communication gap stems from the fact that most physicians are unaware of the social powers they possess. The Fifteen Minute Hour[11] develops the idea that these can be forceful elements in influencing the behavior of others. One of these powers is the coercive power, which implies that physicians have the authority to coerce good behavior and compliance from a patient. For example, disapproval or the threat of hospitalization may convince a patient to follow an arduous or otherwise distasteful medical regimen.

The deliberate use of positive reinforcement can also have an immense impact on modifying the patient's experience and behavior. In survey results appearing in Consumer Reports,[12] a significant number of patients faulted their doctors' communication skills and noted specifically that doctors were not open to questions, did not ask patients' opinions about their ailments, and did not give advice on making healthy lifestyle changes. About a quarter of the time, the doctors did not discuss side effects of the drugs they prescribed. People whose physicians did not communicate well were less likely to follow the doctor's instructions and less likely to say their condition had improved.

Special populations and compliance

• *Geriatric issues* Of all the age-groups using health services, older persons are the most likely to have compliance problems. Although the relationship between age and compliance is controversial—since persons over 65 constitute 11% of the population and consume 25% of prescription drugs—they are statistically more likely to make medication errors.[13] In addition, they face psychological, environmental, and social barriers[14] that in conjunction with poor physician-patient relationships, complicated regimens, adverse drug reactions, poor patient instruction, and improper dispensing produce a multidimensional compliance problem. In turn, poorer disease control can more dramatically change the health status of the older person. This change in health status often means a one-way ticket to a long-term care facility. For all these reasons, noncompliance has a more significant impact in the elderly population than in other age-groups.

• *Childhood issues* Compliance issues in childhood are also distinctive. Children are often unaware of discomfort, as when they are diagnosed with leukemia. Convincing a child to take medication thus requires a special skill. And sometimes the medication may be unpleasant or difficult to administer, such as nasal sprays. The parent's attitude toward a medication can also be a critical barrier to compliance. A typical example is when a parent of an asthmatic child has a fear of corticosteroids.

• *Adolescent issues* Adolescents represent another special population when it comes to compliance. Their behavior is often irresponsible, they believe themselves to be invulnerable, their parents are unable to supervise the drug

regimen, and they often self-medicate with illicit drugs.

• *Cultural issues* are important to consider when thinking about compliance. It is important that any language barrier be minimized as much as possible, that the physician understands the patient's interpretation of nonverbal communication, that trust is firmly established, and that both parties understand the different sociocultural and ethnic concepts of disease and its treatment.

Approaches to enhancing compliance

Interventions that help enhance compliance can be remarkably simple, but physicians with their hectic schedules often feel they are too time-consuming. To the contrary, time spent improving compliance is not only a great service to patients in particular, but also to society and its well-being in general (Table 1).

The first step is to get to know the patient and his or her lifestyle, family, work, hobbies, and living arrangements. The second is to find out about the patient's other diseases, other physicians, and other prescribed and OTC medications, including vitamins and herbs. The third is to ask which disease symptoms the patient finds more troublesome, and how they affect his or her quality of life. The fourth is to state the short- and long-term goals of treatment, along with potential risk factors for noncompliance. The fifth and last is to assess the patient's psychological state; if he is depressed or anxious, it would be wise to consider psychopharmacology.

Once rapport has been established, the physician should outline what the patient can expect in terms of continuity. Ideally, the patient will be followed by the same physician or medical team. Follow-up appointments should be appropriately spaced and made clear to the patient. Advice about medication as well as activities, routines, and behaviors should be explained in the context of the patient's lifestyle.

Patients need to feel that their emotional needs are being met. The use of a short quality-of-life (QOL) questionnaire, both before and during treatment, can underscore interest on the part of the staff in addressing real-life problems the disease may cause (Figure 1, page 102). QOL data can also be obtained simply by asking "How are your symptoms interfering with your life?" The physician needs to encourage questions and clarify what the patient should expect. If it takes 2-3 weeks for a drug to take effect, as with antidepressants, the patient should be told this. In addition, asking patients their opinions on both clinical care needs and practice service issues can help staff members know how well they are meeting patients' expectations.

Table 1 Keys to improving compliance

- Get to know the patient and his or her lifestyle, family and living arrangements, work, hobbies, and history of diseases, medications, and compliance.
- Establish continuity in care and follow-up visits.
- Ask the patient to fill out a short quality-of-life questionnaire at the first visit and at reasonable intervals.
- Encourage the patient to ask questions and clarify what he or she should expect from treatment.
- Ask patients explicitly about compliance.
- To get the patient committed to the treatment plan, help him or her understand therapeutic goals.
- Ask patients their opinions and incorporate their preferences into the treatment plan whenever possible.
- Ask patients to monitor their compliance and response to therapy.
- Make special efforts with elderly patients: Give them patient information in large type size, and give instructions to family members when necessary.
- Provide close follow-up by telephone, letting a staff person handle this responsibility.
- Educate the patient about the disease and its treatment, and ask him or her to repeat instructions and learning points.

Clinicians may help counteract a patient's fears by asking global questions such as "I'm getting the feeling that something is worrying you. Won't you tell me about it?" Allowing the patient to articulate his or her fears, and then addressing them in a nonthreatening way, can be reassuring and frees the patient to concentrate on what the physician is communicating.

Also important is getting the patient committed to the therapeutic plan. Patients show greater commitment when they understand the goals of therapy and feel some control over its specifics. Techniques such as involving patients in therapeutic decisions are likely to improve compliance because they empower patients in the management of their own health problems and in the prevention of future ones. Ultimately, the patient needs to realize that the act of healing is largely self-dependent. When a patient is involved in decisions regarding therapy, this sense of self-governance may actually promote therapeutic compliance.

Negotiating a therapeutic contract should entail an attempt by the clinician and patient to find common ground. For example, a physician would undoubtedly alienate a pet owner by insisting that the animal be removed from the household. A better tactic would be to instruct the patient in how to minimize dander levels by bathing the pet frequently, for example. Compliance can be enhanced by asking patients their opinions and incorporating their preferences into the treatment plan whenever possible.

Therapeutic efforts are likely to work better when clinicians solicit the patient's active involvement in that care.[15] A therapeutic contract in which a patient is asked to monitor his or her own compliance and therapeutic response and to agree to specific therapeutic goals can be an effective tool to improve compliance.

Elderly patients may need extra help in complying with a therapeutic regimen either because of impaired hearing or eyesight or because polypharmacy has caused confusion over medication dosage and timing. To help circumvent predictable problems, the staff or pharmacist may need to convey instructions regarding therapy to an accompanying family member, caregiver, or neighbor. Giving the patient instructions in large type for later reference is also helpful.

Compliance is an important consideration when deciding among treatment options. Therapy that is effective, safe, and well tolerated, that involves the fewest possible agents, and that is cost-effective and convenient to use will improve compliance.

Close follow-up and clinical support via telephone are also critical elements in improving compliance. Assigning a nurse or physician's assistant to telephone counseling and triage can save the physician's time, prevent unnecessary visits, make for a more efficiently run office, and increase patient satisfaction with overall care. Phoning patients to make sure that prescriptions have been filled or to ask if the patient has any questions or concerns can avoid problems in the long run. Another approach to consider is asking the patient to bring in prescribed medications on subsequent visits to verify there is no confusion over the medication.

Patient education is highly beneficial to the health care mission and cost-control efforts of today's managed care environment. More than any other tool, it turns patients into effective case managers. It also facilitates the shift in clinical medicine from managing disease to preventing illness and maintaining health. It is helpful if the clinician clarifies what should be taught and attempts to coordinate educational messages among the clinical staff. Brochures about common disease processes help patient understanding and encourage cooperation. Further, when patients receive consistent information several times, it has the effect of reinforcing the messages most critical to successful disease management. Although simple written instructions help reinforce key learning points, it is helpful to ascertain whether patients truly understand what they have been told. To that end, patients can be asked to repeat instructions and learning points, rather than merely asking them if they understand everything.

According to one group of investigators,[16]

failures of comprehension are at least as frequent as failures of volition. This group also proposed changing the word compliance to physician-patient concordance. This term implies shared responsibility and goes along with the recent trend of shared decision making in health care.

Conclusion

In summary, the practitioner's obligation in prescribing treatment extends beyond the writing of a prescription. The patient must be reassured; the purpose and specifics of the prescription must be explained, the prescription must be pharmacologically rational, and the patient must be encouraged to take the medication in a manner concordant with the practitioner's design. Noncompliance not only drastically curtails the benefits from therapeutic regimens, but it also produces inestimable costs, both economic and human, and provides considerable frustration for professionals.

To correct this problem, both the physician and the reimbursement systems should give the same attention to solving compliance problems as they do to solving diagnostic dilemmas. With more people living with chronic disease, more of our health care dollars should be spent on insuring adherence to long-term medication regimens. Time should be devoted to clarifying the reasons for noncompliance and then helping the patient cooperate with treatment. Without this effort, our health care becomes disability care. As a society, we should demonstrate that we care about our patients by ensuring compliance.

Demonstrating an interest in patients' problems, regardless of etiology, and engaging them in the resolution of their problems holds the greatest potential for success.[10] Bringing patients into the therapeutic decision-making process improves both treatment satisfaction and compliance. And assessing the patient's preferences for therapy, medication history, compliance history, and attitude toward drug therapy all help to focus the physician on potential compliance problems.

Patient education includes providing infor-

mation about the condition or treatment and discussing potential side effects, differences among drugs, and the importance of taking medication as directed. At times, instructions are better understood if given in written form; and with some patients, reviewing instructions may be beneficial. Finally, the treatment regimen should be kept simple. In essence, communication increases satisfaction; satisfaction increases compliance. §

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Rhinoconjunctivitis Quality of Life Questionnaire

Name:_____ Date:_____

Please score every item—circle the number that best describes how you have been during the last week.

Please indicate how much you have been troubled by each item during the last week as a result of your nose/eye symptoms. Please use the following scale:

(0) Not troubled
(1) Hardly troubled at all
(2) Somewhat troubled
(3) Moderately troubled
(4) Quite a bit troubled
(5) Very troubled
(6) Extremely troubled

Sleep

How troubled have you been by these sleep problems in the last week as a result of your eye/nose symptoms?

a) Difficulty getting to sleep	0	1	2	3	4	5	6
b) Waking up during the night	0	1	2	3	4	5	6
c) Lack of a good night's sleep	0	1	2	3	4	5	6

Non-hay fever symptoms

How troubled have you been by these problems during the last week as a result of your nose/eye symptoms?

a) Fatigue	0	1	2	3	4	5	6
b) Thirst	0	1	2	3	4	5	6
c) Reduced productivity	0	1	2	3	4	5	6
d) Tiredness	0	1	2	3	4	5	6
e) Poor concentration	0	1	2	3	4	5	6
f) Headache	0	1	2	3	4	5	6
g) Feeling worn out	0	1	2	3	4	5	6

Practical problems

How troubled have you been by these problems during the last week as a result of your nose/eye symptoms?

a) Inconvenience of carrying tissues or handkerchief	0	1	2	3	4	5	6
b) Need to rub nose/eyes	0	1	2	3	4	5	6
c) Need to blow your nose repeatedly	0	1	2	3	4	5	6

Nasal symptoms

How troubled have you been by each of these symptoms during the last week?

a) Stuffy/blocked	0	1	2	3	4	5	6
b) Runny	0	1	2	3	4	5	6
c) Sneezing	0	1	2	3	4	5	6
d) Postnasal drip	0	1	2	3	4	5	6

Eye symptoms

How troubled have you been by each of these symptoms during the last week?

a) Itchy eyes	0	1	2	3	4	5	6
b) Watery eyes	0	1	2	3	4	5	6
c) Sore eyes	0	1	2	3	4	5	6
d) Swollen eyes	0	1	2	3	4	5	6

(Visit 1—Please identify 3 activities that have been limited by your nose/eye symptoms during the last week)

Activities

How troubled have you been by each of these activities during the last week as a result of your nose/eye symptoms?

a) Activity 1	0	1	2	3	4	5	6
Specify activity _____							
b) Activity 2	0	1	2	3	4	5	6
Specify activity _____							
c) Activity 3	0	1	2	3	4	5	6
Specify activity _____							

Please indicate how often during the last week you have been trobled by each of these items as a result of your nose/eye symptom. Please use the following scale:

(0) All of the time
(1) Most of the time
(2) A good part of the the time
(3) Some of the time
(4) A small part of the time
(5) Hardly any time at all
(6) None of the time

Emotional

How often during the last week have you been troubled by these emotions as a result of your nose/eye symptoms?

a) Frustratation	0	1	2	3	4	5	6
b) Impatience or restlessness	0	1	2	3	4	5	6
c) Irritability	0	1	2	3	4	5	6
d) Embarrassment because of your symptoms	0	1	2	3	4	5	6

Adapted with permission from Juniper EF, Guyatt GH. Development and testing of a new measure of health status for clinical trials in rhinoconjunctivitis. Clin Exp Allergy 1991;26:83.