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The Practitioner and the Compliant Patient

For centuries, practitioners have attributed successful outcomes in part to the potency of the medication they prescribed. Unsuccessful outcomes have been attributed to weak medications, insurmountably ill patients, or divine intention. Research conducted largely in the past 20 years has given us a more sophisticated understanding of what goes on when we prescribe a medication. Investigations of the placebo response phenomenon have demonstrated that a successful outcome may derive from the *process* of prescribing a medication, regardless of the pharmacologic action of the medication. At the same time, investigations of patient drug-taking behavior have indicated that an unsuccessful outcome may not reflect on the potency of the medication, or the biology of the patient; rather, the drug may not have been taken as prescribed.

How often does this happen? In two recent reviews of the literature, Blackwell reports that complete failure to take medication occurs in approximately 25–50 per cent of outpatients. He also speculates that additional numbers of patients appear to take the medication prescribed, but erroneously.[1, 2]

Various methodologies have been used to study "patient compliance." Simple pill counts have been used most often, and may be reasonably accurate.[3] Moulding developed an ingenious medication dispenser using radioactive material and photographic film to record the regularity with which medication packets were removed, a question which simple pill counts cannot address.[4] More accurate methods have included the measurement in blood or urine of the medication, its metabolites, or a tracer substance deliberately attached to the medication.

Many factors may influence patient drug-taking behavior: factors which are reflections of the patient, the practitioner (whether a physician, nurse practitioner, or physician assistant), and the patient-practitioner relationship.

Social Characteristics of the Patient: Some studies have suggested that patients at the extremes of age are more likely to be "non-compliant."[1] Although educational background has been cited as influential, there is little support for this position. Patients living alone, without much social stimulus or encouragement, were shown in at least one study[5] to be more "non-compliant."

Patient Personality: The patient who harbors hostility towards authority figures, the immature and impulsive personality, the obsessional patient for whom the "dependence" on a drug may threaten a loss of self-control, or the paranoid patient who sees the medication as an instrument of evil—all these personality types have been described as likely "non-compliant" patients.

Patient Understanding of the Illness: Most observers agree that, for adequate "compliance," the patient must understand that he is *susceptible* to a particular illness, and that the illness is potentially *severe*.[6] The nature of certain illnesses makes it difficult for the patient to appreciate susceptibility and severity. This is particularly true if no signal of worsening disease is apparent. The most common and compelling signals are symptoms—particularly pain or discomfort—but other signals can trigger action as well (such as rising urine sugar concentrations on home testing, particularly in a patient who has previously experienced ketoacidosis). With indolent chronic illnesses, the course of which is or appears to be altered only slightly by treatment, non-compliance is more common; perhaps the prime example is hypertension. Like-

wise, acute minor illnesses which are only briefly symptomatic, but which require more prolonged treatment for prophylactic purposes (such as streptococcal pharyngitis), often lead to non-compliance.[7]

Patient Understanding of the Treatment: The patient should understand not only that a certain treatment will help, but also *how* (in general terms) it works. The patient should also understand the specifics of the therapeutic regimen. As Dr. Hulka and her colleagues point out in this issue of the *Journal* and elsewhere,[8, 9] scheduling misconceptions are a common problem.

Patient-practitioner Relationship: The patient's perception of the practitioner's concern and competence appear to be important. Korsch, et al., have documented that patients are more likely to be "non-compliant" if their expectations in seeking care are not met, if they perceive lack of warmth in the practitioner, or if they fail to receive an explanation of their illness.[10, 11]

Practitioner Attitudes: 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 the practitioner regularly and explicitly inquires about compliance. How often, indeed, do we ask our patients whether they are taking their medicines? And if their answer is "yes", how often do we seek to determine whether they are taking the medications as we intended? If we do not regularly express our concern, can we blame the patients for doubting it?

Roth and others have shown that practitioners do no better than chance in predicting which patients will be compliant.[12, 13] Hence, a policy of making a special effort to encourage the suspected "non-compliant" patient—while presumably making only a normal effort to encourage the "probably compliant" patient—is likely to be unsound.

What can practitioners do to encourage compliance? If we are going to make a special effort with some patients, it should be based not on our demonstrably fallible intuition about the patient's likely compliance but on an assessment of the patient's social and personality risk factors, as identified earlier. Even though it may not be sufficient (at least in patients with asymptomatic disease),[14] a rigorous effort to educate patients about their illness and its treatment would seem to enhance the likelihood of compliance and to have an intrinsic value. Physicians may not be the best educators; other members of the health team should increasingly fill this vital role. It requires a special sensitivity and skill for a professional to avoid jargon and to explain simply and clearly an illness and its treatment. Materials carefully written and illustrated for the patient can supplement verbal explanation. Prescription blanks can contain a printed instruction that the pharmacist identify the contents and regimen on the typed bottle label, rather than a statement such as "take as directed." If the patient is taking several medications, the practitioner's prescription might specify the illness for which each medicine is required: e.g., "Take one pill each morning *for high blood pressure.*" The practitioner should be careful in phrasing such instructions. Blackwell[1] cites an amusing but unfortunate instance: a patient told to take a diuretic "as necessary for fluid retention" took the pill whenever sleep was interrupted by nocturia, in order to "retain the fluid."

The practitioner should also be cognizant of the many possible barriers to compliance. There is abundant evidence that compliance is *less* likely as the number of medications increases; therefore, the practitioner should carefully consider the necessity of each medication (e.g., is supplementary potassium always necessary?), and should take advantage of combination medications (e.g., alpha-methyl dopa/thiazide combinations) when clinically appropriate. The therapeutic regimen should be prescribed with an appreciation of the patient's life style in mind; for instance, the patient may be unwilling to take a medication at work which is embarrassingly conspicuous, such as a liquid antacid.

Since the complexity of the regimen affects compliance, the practitioner should prescribe each medication on as infrequent a schedule as is possible (e.g., is a three-times-a-day schedule really more efficacious than a twice-a-day schedule?), should avoid alternate-day schedules, should try to unify schedules when several drugs are given, and should try to relate the drug-taking to a regular daily event such as awakening, mealtimes, or before sleep. When possible, we should prescribe pills that look different from one another—the patient who confuses the little white *digitalis* pills with the little white *diuretic* pill can get into serious trouble.

The practitioner should also remember that medication side-effects constitute an important reason for "non-compliance." We sometimes forget to ask about side-effects, or fail to appreciate their importance to the patient. I was reminded of this recently when I chided a patient for letting a little nausea stop her from taking a medication I felt was vital. She responded somewhat impatiently, "Look! I don't feel that good that I can afford to feel bad!"

One final point. The term "patient compliance," as Dr. Hulka points out,[8] implies that the patient always understands fully the need for a medication and the specifics of the regimen prescribed, but willfully chooses to follow or ignore the practitioner's instructions. However, as the previous discussion suggests and as Dr. Hulka's report demonstrates,[8] failures of comprehension are at least as frequent as failures of volition. To characterize the patient as the willful culprit—as "non-compliant" or, worse, a "drug defaulter"[2] (as if the defaulting patient was failing to honor some legal or sacred obligation)—is to ignore the responsibility of the practitioner. Indeed, given the sometimes irrational prescribing habits of physicians,[15, 16] the "non-compliant" patient may sometimes be doing himself a favor. The more neutral term "physician [practitioner?]—patient concordance," proposed by Dr. Hulka, implies *shared* responsibility and is surely preferable. Indeed, two recent studies suggest that an extra effort by practitioners—such as teaching the patient to help monitor his or her disease and rewarding improvement in "compliance"—leads to better control of disease.[17, 18]

The moral of the story is straightforward: 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 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.

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Racial Inequality and Neonatal Jaundice

The standard practice of administering anti-Rh gamma globulin to unsensitized Rh-negative women shortly after delivery of Rh-positive infants has made erythroblastosis fetalis or hemolytic disease of the newborn a disease of diminishing importance. As a result, hyperbilirubinemia and jaundice are seen less frequently in newborns; when they occur, the dread complication of kernicterus, or brain damage from high levels of unconjugated bilirubin, usually can be avoided by frequent measurements of indirect bilirubin and by exchange transfusion if the level rises to dangerous degree. However, there are still other causes of hemolytic anemia and hyperbilirubinemia, and physicians must remain aware of the continuing danger of brain and nerve damage if toxic levels of indirect bilirubin develop.

ABO hemolytic disease of the newborn, usually associated with a group A* infant born to a group O mother, has always been about twice as common as the Rh variety. Fortunately, it is usually relatively mild, rarely produces hyperbilirubinemia in the first week of life and, if the levels of bilirubin are monitored, probably less than 5 per cent of such cases require treatment. However, the neonatologist, obstetrician, and general practitioner must be constantly aware of the danger of overlooking that rare victim of ABO hemolytic disease in whom hyperbilirubinemia might develop, with its dread complication of kernicterus. Other diseases in the newborn also can produce hemolysis, such as hereditary spherocytosis, G6PD deficiency, hemoglobinopathy, etc., so that hyperbilirubinemia and possible kernicterus still remain a hazard in the newborn period.

The report in this issue by Bucher, et al., deserves particular attention.[1] From a retrospective study they record a racial difference in the incidence of ABO hemolytic disease of the newborn severe enough to come to clinical attention. They estimate the risk to Black newborns to be at least two to three times as great as that to Whites. At present, the reason for this increased risk is unknown. Possible explanations are:

(1) The Black group O women in this study may have had a higher incidence and higher titer of anti-A of the IgG variety that crosses the placenta and affects the infant's red cells than is commonly found in White women. This increase in anti-A IgG in Black women may be the result of genetic or environmental factors, the latter being the more likely.

*Wherever group A is mentioned, the less frequent group B is also implied.