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# The Hidden Epidemic

## Finding a Cure for Unfilled Prescriptions and Missed Doses

In an era when new causes and cures for health conditions are being discovered every day, one troublesome health risk eludes a cure: many patients don't do what the doctor orders. Each year, millions of patients in the United States fail to comply with their physicians' prescribed drug regimens, jeopardizing their health in the process. Contrary to beliefs widely held throughout the health care industry, however, the primary reason why people fail to take their medicine is *not* memory loss. In a proprietary research study by The Boston Consulting Group, only 24 percent of patients who said they don't take their medications as directed cited forgetfulness as the reason.

Instead, the vast majority of these patients are *actively choosing* to disregard their doctors' orders—some because they perceive a drug's side effects to be debilitating or risky, others because they find the medicines too costly, and still others because they make their own decisions about treatment. Our research reveals that how and why patients make these choices vary substantially across segments, depending on the nature of the illness, the patient's involvement in health care decisions, and his or her gender.

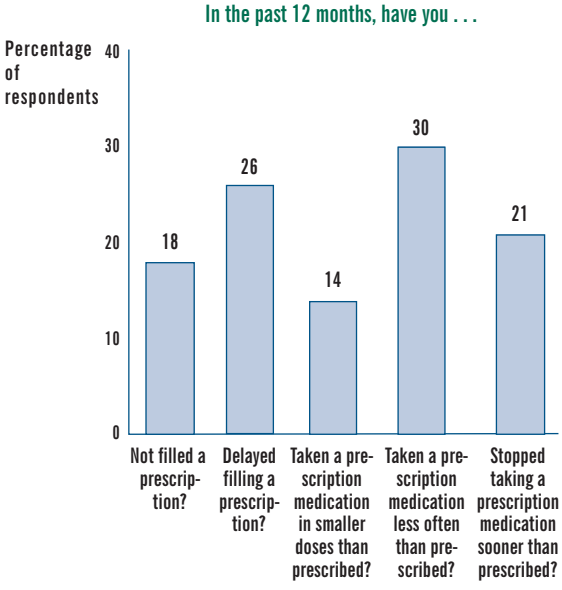
According to the research, which BCG conducted in the United States in collaboration with Harris Interactive, almost one in every three patients we surveyed reported having taken a prescription medication less often than prescribed during the previous 12 months, and about one in four said they had delayed filling a prescription. Nearly one in five admitted that they had failed to fill a prescription during the same period. About one-fifth of the patients we surveyed also stopped taking a prescription medication sooner than prescribed. A smaller but still significant group—about one in seven—took their prescription medication but in smaller doses than prescribed. (See Exhibit 1.) In the aggregate, these behaviors represent a sizable problem in compliance and persistence.[1] Recent studies by the World Health Organization and by Consumer Health Information Corporation, a patient education company, suggest that about half of all patients take their medicines improperly. Overall, these data paint a troubling picture about which drugs are actually taken and when.

Not surprisingly, missed doses often lead to greater health problems down the road as untreated or undertreated conditions worsen or complications

1. In the health care industry, *compliance* is typically defined as a patient's taking his or her medications in the dosages and at the intervals prescribed. *Persistence* is typically defined as a patient's continued compliance with the full course of treatment. In this report, we use *compliance* as a general term for both behaviors.

EXHIBIT 1

**MANY PATIENTS TAKE DRUGS INCORRECTLY, INFREQUENTLY, OR NOT AT ALL**




SOURCES: BCG analysis; *Harris Interactive 10,000 Patients Survey,* 2002.

NOTE: The number of respondents was 9,290. Results were weighted to reflect the demographics of the adult population of chronic patients in the United States.

arise. Such problems, in turn, lead to higher health-care costs. Some studies estimate that the price of compliance problems—including the cost of resulting admissions to hospitals and nursing homes, and of lost productivity—is as high as $100 billion. Improving compliance with prescribed regimens therefore offers health care organizations a significant opportunity to improve both the physical health of their patients and the financial health of their own institutions. Although pharmaceutical companies, payers, providers, and pharmacies disagree on almost every issue in health care today, they all can agree on this: everyone stands to benefit if patients take their prescribed medications as directed.

In addition to delivering obvious wellness benefits to patients, enhanced compliance would help providers care for patients more effectively and efficiently, while helping payers minimize the need for additional medications or—as untreated illnesses worsen—more invasive procedures. Similarly, pharmaceutical companies might find that their drugs deliver maximum effectiveness because medications taken in the dosages and at the intervals prescribed would probably work better. In addition, in the case of maintenance medicines for chronic conditions, pharmaceutical companies and retail pharmacies might actually find that enhanced compliance boosts their revenues by increasing sales. Finally, all organizations would gain an enhanced reputation for providing high-quality care.

## Health Care Players' Point of View: What's Confounding Compliance Programs?

With so much to gain, why aren't health care organizations working more aggressively and effectively to boost compliance? Pharmaceutical companies, for example, are already successful at using patient education, direct-to-consumer advertising, medical marketing, and sales force detailing to drive patients into doctors' offices and to influence doctors' diagnoses and treatment regimens. Why haven't these savvy marketers found a way to make taking prescription drugs more palatable to patients?

It's not that health care organizations aren't aware of the potential opportunities that enhanced compliance offers; it's that many may not yet understand the extent and nature of the compliance challenges they face. We helped a pharmaceutical company, for example, estimate that it could earn one-third more in revenues for its leading drug if it could ensure that all the patients who were prescribed the drug would fill their prescriptions and take the medicine as directed. We also helped a U.S. biotechnology company project that in just five years one of its soon-to-be-launched specialty drugs would increase sales volumes by as much as 15 percent if the company achieved a compliance level of 80 percent for the drug—instead of the estimated level of 65 percent that it was achieving for existing, similar therapies.

In fact, compliance remains largely unaddressed because it's a complex problem—one that requires a complex solution. Most efforts to date have focused on retrospective reminder programs, which typically use e-mail or other means to prompt patients with chronic conditions to refill their prescriptions *after* they have already failed to comply. But with three-quarters of noncompliance driven by causes other than forgetfulness, these after-the-fact reminder programs largely miss the mark. Truly effective programs must find ways to address the root causes of shortfalls in compliance and coordinate multiple functions within a health care organization, while also engaging everyone from the doctors who write the prescriptions to the pharmacists who fill them.

Despite their required complexity, programs to improve compliance should now hold more attraction than ever to health care organizations in the United States and Europe. With profits squeezed and health care reform being hotly debated, these players now have a strong impetus to enhance compliance in order to bolster their effectiveness and image, their patients' health, and—in the process—their own financial health.

## Patients' Point of View: Why Don't They Always Take Their Prescribed Medications?

Epidemics like smallpox and influenza were successfully thwarted only after the scientific establishment had gained a thorough understanding of the underlying causes—and then attacked them

head-on. And so it goes with patient compliance: health care players can't begin to solve the problem of millions of unfilled prescriptions and missed or incorrect doses until they truly understand the underlying reasons for these behaviors.

As we noted above, many of the failures to date in boosting compliance have resulted from either the mistaken belief that most patients simply forget to take their medications or from an overemphasis on forgetfulness, since it is one of the easiest causes to address. Indeed, although 24 percent of patients who do not always comply with doctors' orders did admit to memory lapses, almost as many (20 percent) explained that they forgo medications because of the side effects. That is, they find the cure quite literally worse than the disease, perceiving a drug's side effects as undesirable or debilitating. (See Exhibit 2.) An additional 17 percent said that the drug's effect on their wallet is what they find most debilitating, so they take what they deem to be pricey drugs in lower doses or less often than prescribed—or do without them entirely.

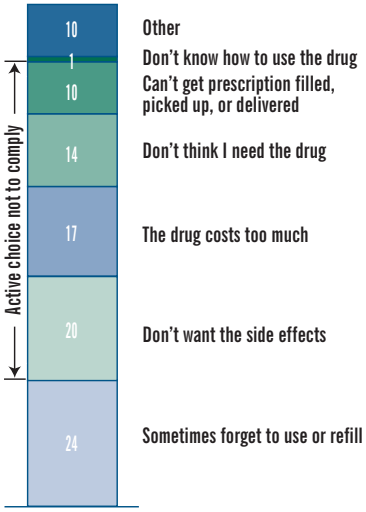
Interestingly, 14 percent of patients reported that they modify or abandon drug regimens because they "don't need" the drugs, determining on their own—or perhaps with the assistance of online research or the advice of fellow patients—that the drug is ineffective or ill suited to their needs. These self-medicating patients may research new drugs to suggest to their physicians or may augment or substitute a prescription with an alternative treatment. Finally, 10 percent said that they find it difficult or inconvenient to pick up drugs at the pharmacy or to get them delivered, while a scant 1 percent reported that they aren't sure how to take their medicine.

EXHIBIT 2

**MOST PATIENTS ACTIVELY CHOOSE WHETHER TO TAKE MEDICINE AS DIRECTED**

Reasons Why Patients Don't Fill Prescriptions or Comply with Drug Regimens

Percentage of respondents citing each reason




SOURCES: BCG analysis; *Harris Interactive 10,000 Patients Survey,* 2002.

NOTE: The number of respondents was 9,290. Results were weighted to reflect the demographics of the adult population of chronic patients in the United States. Percentages do not total 100 because respondents could cite more than one reason or respond "no" to each of the reasons.

Our research also found that the extent to which individuals fail to comply with drug regimens—and the reasons why they do so—vary on the basis of several factors:

- The nature of the patient's condition
- The extent of the patient's involvement in health care decisions
- The patient's gender

**The Nature of the Patient's Condition.** The extent to which a condition's symptoms are debilitating and its consequences life threatening influences how and why a patient deviates from his or her doctor's treatment regimen. For example, multiple sclerosis, hypertension, and depression can all have a significant impact on the quality of a patient's life. Yet nearly half of the patients in our survey with depression (43 percent)—which is not usually life threatening—reported that they had taken their prescription medication less often than prescribed, compared with only 30 percent of patients with MS and 29 percent of patients with hypertension. (See Exhibit 3, page 4.)

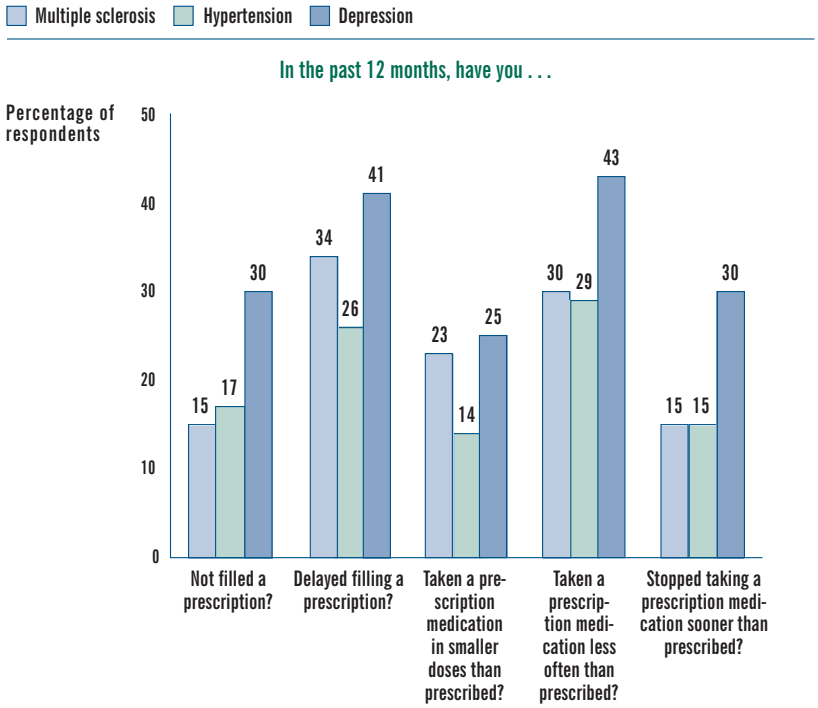
This difference may exist, in part, because the physical symptoms associated with MS—and the greater mortality associated with both MS and hypertension—serve as a more powerful motivator to take one's prescribed medications. Furthermore, like antibiotics, antidepressants may simply be more prone to noncompliance. With both classes of drugs, patients may tend to stop taking their medications when the drugs begin to alleviate their symptoms, even though the full course is necessary to cure or fully treat the condition.

The reasons why patients don't always comply with doctors' orders vary by other aspects of the diseases as well. For example,

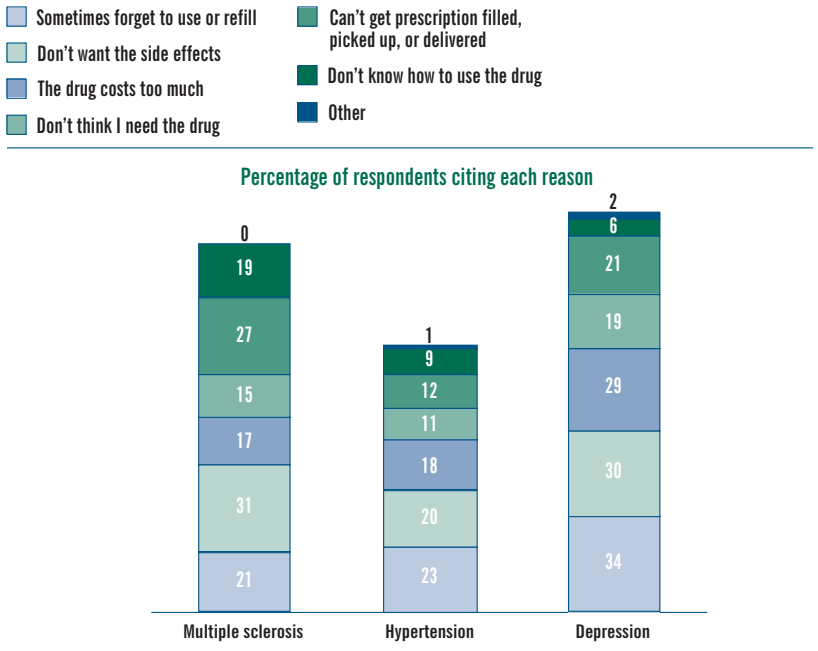
EXHIBIT 3

## DISEASE STATES INFLUENCE WHY AND HOW PATIENTS DON'T COMPLY

### COMPLIANCE BEHAVIORS




### REASONS WHY PATIENTS DON'T FILL PRESCRIPTIONS OR COMPLY WITH DRUG REGIMENS




**Sources:** BCG analysis; *Harris Interactive 10,000 Patients Survey,* 2002.

**Note:** The number of respondents was 9,290. Results were weighted to reflect the demographics of the adult population of chronic patients in the United States. Percentages in the bottom chart do not total 100 because respondents could cite more than one reason or respond "no" to each of the reasons.

even though both antihypertensives and MS drugs elicit side effects, concern about side effects was cited as a reason for forgoing medications about 50 percent more often by patients with MS than by patients with hypertension. Largely, this difference reflects the greater severity of the side effects resulting from the interferons generally used to treat MS: they elicit severe flulike symptoms, often inhibiting patients' usual activities.

**The Extent of the Patient's Involvement in Health Care Decisions.** In 1999, when BCG began researching e-health and its influence on patients and physicians, we identified four segments of patients:[2]

- *Accepting,* who rely almost entirely on doctors for information and decisions
- *Informed,* who rely on doctors to make decisions but typically do research after appointments to learn more about a diagnosis or prescribed treatment
- *Involved,* who see themselves as partners with their doctors in making health care decisions
- *In Control,* who believe that they are best suited to determine their own care, using information from a variety of sources to diagnose their own conditions and determine which treatments they will request from their doctors

2. BCG explored the different behaviors of patients in the four segments in the reports *The E-Health Patient Paradox,* May 2001, and *Vital Signs: E-Health in the United States,* January 2003. An illustration of our segmentation is available at www.bcg.com on the Health Care Web page.

These segments continue to be important in an analysis of compliance, with one surprising new consequence for the health care industry. Our previous research concluded that involved and in-control patients are the most valuable targets for health care players seeking to influence treatment decisions, both because these individuals play an active role in their own care and because they visit their doctors most often and take the highest number of prescription medications. Our latest research, however, indicates that patients in these two segments are also the most likely *not* to fill a prescription or comply with treatment regimens. (See Exhibit 4.)

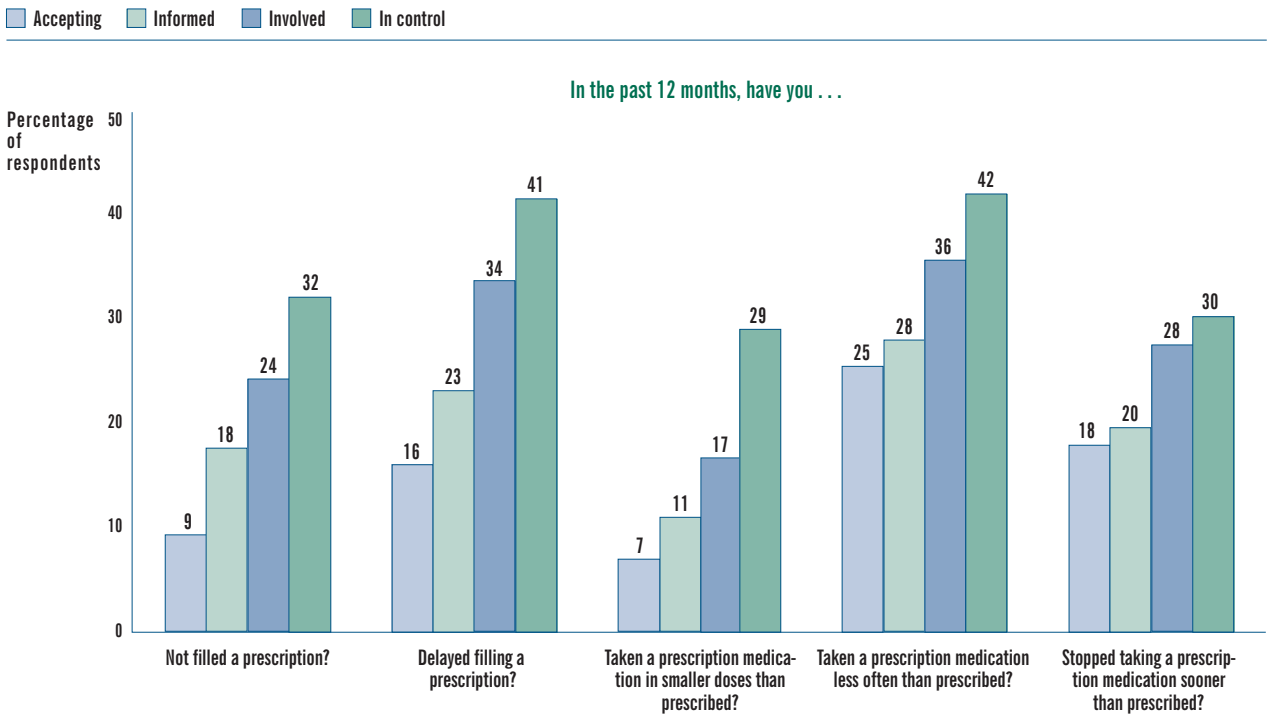
Ironically, this means that the very same patients who are most likely to request a drug by name are also the most likely to stop taking a drug against their doctors' orders. In keeping with this finding, the in-control group cited forgetfulness 26 percent less often than patients did overall as a reason for not always complying with prescribed drug regimens.

Although the in-control group's greater proclivity to deviate from doctors' orders poses the greatest risk to compliance, these patients also reported being the most active in researching their conditions as well as the most heavily influenced by the health care information they find on the Internet. Thus, they may be the easiest group to reach through a compliance program—particularly one that uses Web-based or new technologies—and the easiest to move toward compliance once they are convinced it is in their best interest. The challenge is articulating, delivering, and reinforcing those messages in a compelling way.

In addition, for the more passive accepting and informed groups, health care players may be able to improve compliance considerably by influencing how and how much doctors directly address compliance issues related to specific therapies during consulta-

EXHIBIT 4

## PATIENTS WHO ARE MOST INVOLVED IN THEIR OWN CARE REPRESENT THE LARGEST POTENTIAL THREAT AND THE GREATEST OPPORTUNITY




**Sources:** BCG analysis; *Harris Interactive 10,000 Patients Survey,* 2002.

**Note:** The number of respondents was 9,412. Results were weighted to reflect the demographics of the adult population of chronic patients in the United States.

tions. Compliance could get a significant boost if, at the precise point of prescription, doctors explained more often and more thoroughly the prescribed medications, their value, how best to manage side effects, and the importance of compliance.

**The Patient's Gender.** Perhaps because women generally take a more active role in their own care (women represent a higher percentage of the in-control group, for example), they are also less compliant than men—about 24 percent less compliant across all segments. (See Exhibit 5.) Women's lower levels of compliance pose both a great threat and a great opportunity, particularly because the caregiver role that women often assume involves them in the health care decisions and compliance decisions of their children and parents.

## What Health Care Players Can Do to Make Taking Prescription Medications Easier to Swallow

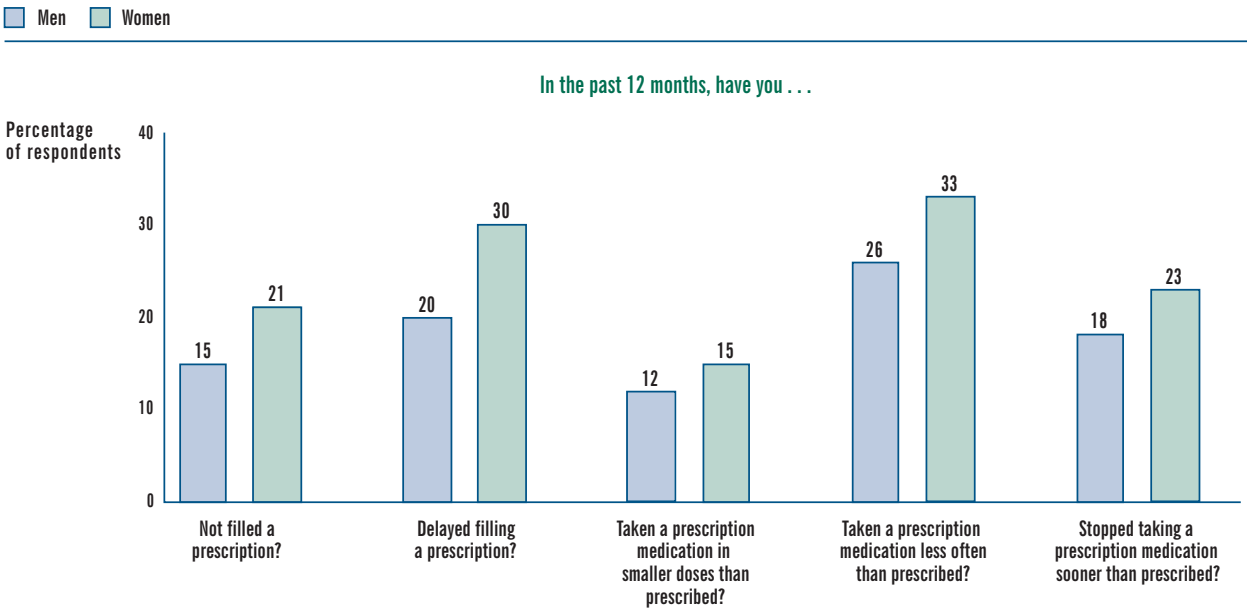
Given the complexity involved in improving compliance, achieving this collective good will most likely require a collaborative effort among the full spectrum of health care players. Although each organization stands to gain significant, demonstrable results if it can get compliance programs right, few can address all the root causes of incomplete compliance on their own. The necessary skills and tasks are simply too numerous and varied:

- Explaining, monitoring, and minimizing clinical side effects
- Tailoring patient education to attitudes and behaviors
- Addressing pricing and reimbursement issues that might limit access
- Enabling better relationships between prescribers and patients
- Making it easier to get prescriptions filled
- Motivating patients to comply with therapeutic regimens for extended periods—long after they have filled the initial prescription for a particular drug

Whether it takes the form of simple cooperation, shared data programs, or full-scale formal part-

EXHIBIT 5

**WOMEN ARE LESS LIKELY THAN MEN TO COMPLY WITH PRESCRIBED DRUG REGIMENS**




**Sources:** BCG analysis; *Harris Interactive 10,000 Patients Survey,* 2002.

**Note:** The number of respondents was 9,290. Results were weighted to reflect the demographics of the adult population of chronic patients in the United States.

nerships, teamwork will be critical. To this joint effort, each player will need to bring its unique expertise and perspective:

**Pharmaceutical Companies.** These players can deploy many powerful weapons in the battle for enhanced compliance; we highlight just two examples here. First, drug companies can use vast sales organizations in the field to help educate prescribers about the root causes of compliance problems and the ways to avert many issues by communicating effectively with patients during consultation and when writing prescriptions. Second, the companies can exploit their marketing prowess in communicating to distinct patient groups—a strength that may afford them particularly effective access to the segments that are more active in their own care.

**Providers.** Physicians and health care organizations have the first opportunity to address compliance directly with patients by setting the stage for compliance. During consultations and while writing prescriptions, providers can explore any early resistance from patients based on cost or side effects, detail the precise road map to proper compliance, and emphasize its importance. Such reinforcement may be as simple as having a nurse review drug regimens with patients before they leave the doctor's office or hospital, or it may be as comprehensive as a program to encourage and reward compliance.

**Payers.** Payers possess a wealth of patient data that they could exploit to identify the populations most likely not to comply with prescribed regimens. If they accomplished that, payers could flag other patients at risk for similar behaviors—and intervene with disease management or compliance programs before those behaviors arise. Furthermore, payers can best manage the economic levers that can influence compliance, such as higher reimbursement rates for better medical outcomes and lower copayments for patients who enroll in such programs. Finally, given their relationships with pharmaceutical companies, providers, and pharmacies, payers may also be best positioned to help orchestrate compliance programs across the entire value chain of health care. Payers can focus on the patient's complete health—rather than on just one drug or condition—to address comorbidities and identify and reverse any overall patterns of noncompliance.

**Pharmacies.** Pharmacies are the last in the health care value chain to interact with patients receiving new prescriptions. Therefore, they can use multiple methods to explain and emphasize the value of compliance. These include offering compliance-focused counseling at the point of fulfillment, enrolling patients in disease management programs before they leave the pharmacy, and sending patients home with user-friendly literature that explains clearly how to manage side effects and maintain health through compliance. Specialty pharmacies may be particularly well positioned to work with doctors and counsel patients in order to manage their expectations about a drug's safety and efficacy, and thus enhance compliance. Some specialty pharmacies have deployed successful compliance programs that involve doctors at the point of prescription and motivate patients to take their medications by actively tracking and rewarding compliance.

## Traits Common to Effective Compliance Programs

We believe that no matter where compliance programs originate, the successful ones will share a number of features:

**They will rely on thorough knowledge of patient behavior to understand when and why patients don't take a specific medication.** Such programs will draw on data from drug companies about patients' attitudes, as well as on data from pharmacies and payers about fill rates and refill frequencies. These programs will also understand compliance within the context of a specific disease and tailor solutions to different types of patients.

**They will create a program that uses coordinated input from all the parties that influence compliance decisions and ensures coordinated execution.** Such coordination must occur both within a single organization and across the entire value chain in health care delivery, from drug companies to pharmacy operations.

**They will enroll patients in compliance programs as soon as they receive a prescription or get one filled.** A recently successful pro-

gram that included this tactic in its strategy cut annual drop-off rates for maintenance medicines by half (from 40 percent to 20 percent) and realized an immediate 5 percent increase in revenues even before other elements of the program took effect.

**They will deploy strategies that target the drivers of noncompliance, and they will exploit all the resources that influence compliance.** The best programs employ a full range of mechanisms to address all the causes of poor compliance, but they focus on the levers that are most powerful among the targeted disease or patient group. For example, to reach involved or active patients with cancer who are concerned about the potential side effects of a prescribed treatment, players could publicize proven results from studies; design materials that doctors can use to explain the mechanisms of the disease and the drug; and develop interactive Web sites for new prescribers, enrolling patients in these programs at the point of prescription. They also could create innovative packaging—such as Pfizer's Z-PAK—to emphasize the therapeutic benefits of the drug if taken as prescribed.

As players collaborate to reach patient groups through a unique mix of channels, they will need to address fundamental questions: Which player owns a customer relationship? Which player is in the best position to truly affect compliance? How will the required investment in compliance programs be shared? And how will the resulting effort be governed?

These are challenging questions to address, but organizations that master them will unleash significant value for their businesses, for medicine, and, most important, for patients.

Survey questions about compliance were designed by The Boston Consulting Group in conjunction with Harris Interactive. The questions were fielded nationally by Harris Interactive using the Harris Interactive Chronic Illness Panel of online respondents. A total of 13,553 patients aged 18 and over were surveyed in April 2002. The data were weighted to the U.S. population of adults with specific chronic illnesses (covering more than 40 chronic conditions). Harris Interactive is a worldwide market-research and consulting firm best known for The Harris Poll and for pioneering the Internet method to conduct scientifically accurate market research. Its Web site is www.harrisinteractive.com.

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