

# Strategies for Improving Treatment Adherence in Schizophrenia and Schizoaffective Disorder

Donald C. Goff, MD; Michele Hill, MRCPsych; and Oliver Freudenreich, MD

Nonadherence with medication treatment is common but difficult to detect in patients with schizoaffective disorder and schizophrenia, almost half of whom take less than 70% of prescribed doses. Like patients in all areas of medicine, patients with schizoaffective disorder weigh the perceived benefits of medications against perceived disadvantages, but this process is complicated by their impaired insight, the stigma of the diagnosis, and the often troubling side effects of antipsychotic medication. Interventions to improve adherence include encouraging acceptance of the illness, drawing analogies with treatment for chronic medical disease, and involving the patient in decision making. Clinicians must remain nonjudgmental, encouraging patients to disclose problems with adherence and anticipating that improvement in adherence may require a prolonged effort. Selection of antipsychotic medication is critical to avoid adverse side effects, and some medications may provide a sense of well-being, such as improvement in insomnia, anxiety, or depression. Depot (rather than oral) antipsychotics can improve adherence and provide the clinician with reliable information about the dosage of medication received, which can be used for purposes of dose adjustments or to guide response to relapse.

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A recent editorial<sup>1</sup> noted that as many as half of all patients in the United States do not take medications as prescribed, resulting in avoidable hospitalizations that are estimated to cost \$100 billion annually. For example, as many as 86,000 premature deaths each year are attributable to nonadherence with antihypertensive agents.<sup>2</sup> In a meta-analysis, Cramer and Rosenheck<sup>3</sup> found adherence with antipsychotics to be lower than with other medications, including nonpsychiatric treatments and antidepressants. The mean adherence rate with antipsychotic medications, calculated from 24 studies, was 58%, with a range from 24% to 90%. By comparison, adherence was 65% with antidepressants and 76% with treatments for nonpsychiatric disorders. The true difference between adherence rates with antipsychotics compared with other medications may be even greater because, in these studies, adherence with antipsychotics was estimated primarily by patient self-report and clinician judgment, both of which tend to overstate adherence; however,

adherence rates in nonpsychiatric patients were obtained from studies that used microelectronic monitoring. As the new federal health care reform focuses the attention of policymakers upon improved outcomes and more efficient use of health care resources, enhancing adherence is a priority for clinical research and practice.

## MEASURING ADHERENCE

Accurate measurement of adherence is central to understanding the magnitude of the problem, identifying contributing factors, and assessing the effectiveness of interventions. Several methods of measuring and defining adherence exist, each with its own set of limitations.<sup>4</sup> Patient self-report and clinician estimates of adherence, in particular, have been shown to be unreliable and increasingly are supplemented by more direct or objective measures, such as pharmacy fill rates of patients' prescriptions, pill counts (in which patients bring pills to a clinician to be counted or home visits are made to count the pills), and electronic monitoring.<sup>5</sup>

When patients fill their prescriptions within a closed pharmacy network, over time the number of days that elapse between each prescription refill provides a means of calculating the number of missed doses. For example, if a patient returns to fill a prescription 40 days after a 30-day supply of medication was dispensed, it is estimated that the patient missed 25% of prescribed doses during the 40-day period.

Alternatively, electronic monitoring with Medication Event Monitoring System (MEMS) technology uses microchips that record the time of each opening of the pill bottle. This approach is predicated on the assumption that pill bottle openings correlate with ingesting the appropriate dose, which appears to be a relatively reliable assumption under most

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*From the Schizophrenia Program, Harvard Medical School and Massachusetts General Hospital, Boston.*

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*Corresponding author: Donald C. Goff, MD, Freedom Trail Clinic, 25 Staniford St, Boston, MA 02114 (goff@psych.mgh.harvard.edu).*

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## FOR CLINICAL USE

- ◆ Adherence to medication is low in patients with schizoaffective disorder and schizophrenia and is difficult to assess without objective evidence.
- ◆ Poor treatment adherence leads to increased rates of relapse and rehospitalization.
- ◆ Strategies such as electronic monitoring of pill bottle openings, simplified dosing, supervised medication taking, reminder systems, depot medications, and psychotherapeutic interventions can increase adherence.
- ◆ Patients' attitude toward treatment and strength of the therapeutic alliance greatly influences adherence to treatment.

conditions. However, early studies using electronic monitoring in medical patients demonstrated the importance of extended periods of measurement because adherence rates often vary over time. For example, a long-term study<sup>6</sup> of patients with epilepsy demonstrated substantial improvement in adherence during the weeks immediately before and after appointments with their doctors. This finding also suggests that another common approach to evaluating adherence, ie, a single measurement of blood medication level, may be misleading, especially if the blood is drawn at a regularly scheduled doctor's appointment.

For clinicians who do not have access to electronic monitoring, pharmacy data on prescription refill rates can provide a useful screen for identifying patients with adherence problems.<sup>7</sup> However, clinicians generally need to obtain as much information as possible from various sources to assess an individual patient's adherence. Velligan and colleagues<sup>4</sup> suggested that all studies include at least 2 measures of adherence to oral antipsychotic medications, 1 of which should be a direct or objective measure such as pharmacy refill records, pill counts, or electronic monitoring. Similarly, Schooler and colleagues<sup>8</sup> proposed a method called *all source verification* for the assessment of adherence in clinical trials of patients with schizophrenia. All source verification stresses the use of multiple sources of information, including pharmacy records and other medication sources (eg, samples), as well as patient self-report and judgments by clinicians, family members, and other caregivers.

#### ADHERENCE PATTERNS IN SCHIZOAFFECTIVE DISORDER AND SCHIZOPHRENIA

In a study using electronic monitoring with MEMS caps over a 3-month period, Byerly and colleagues<sup>9</sup> examined 25 patients with schizophrenia and schizoaffective disorder and found that 48% were nonadherent, as defined by missing more than 30% of doses. Clinicians failed to identify any of the nonadherent patients. Adherence was not a bimodal characteristic—adherence rates were evenly distributed between the 7 patients (28%) who took more than 90% of prescribed doses and the 1 patient (4%) who took less than 10%.

In a subsequent study,<sup>10</sup> Byerly and colleagues followed 61 patients with schizophrenia and schizoaffective disorder

for up to 6 months using electronic monitoring. In addition, patients and their clinicians were asked to estimate antipsychotic adherence over the previous month, and a research assistant also assessed adherence by interviewing the patient using a 3-item questionnaire. Again defining nonadherence as missing more than 30% of doses, the MEMS caps data revealed a nonadherence rate of 57%, compared with nonadherence rates of 5% as reported by patients and 7% by prescribers. The research assistants were more accurate than the patients or the prescribers and identified 54% of participants as nonadherent, with a 36% error rate that was evenly distributed between false positive labeling of nonadherence and false negative labeling of adherence.

In a similar study, Velligan and colleagues<sup>11</sup> found that pill counts of oral antipsychotics correlated with adherence rates calculated by electronic monitoring, whereas both patient self-report and clinician estimates of adherence were weakly correlated with pill counts. Notably, clinician estimates correlated with the patient's clinical status, suggesting that clinicians assume patients are compliant if they are doing well.

To the extent that electronic monitoring of pill bottle openings is a valid measure of adherence, these studies demonstrate that nonadherence in patients with schizoaffective disorder and schizophrenia is both common and difficult to detect. Furthermore, adherence status is not as simple as the categories of "adherent" and "nonadherent" suggest—ie, an individual's level of adherence may vary over time and often is best captured by the term "partial adherence." For example, Valenstein et al<sup>12</sup> found that, over a 4-year period, 18% of schizophrenia patients were consistently nonadherent, 43% were inconsistently adherent, and 39% were consistently adherent. Finally, the tendency for patients and clinicians to greatly overestimate adherence has implications for researchers and clinicians alike. The fact that research assistants obtained a markedly less biased estimate of adherence suggests that the special interaction between patient and clinician promotes exaggeration of compliance—most likely a reflection of patients' fears of disappointing their physician.

Studies using pharmacy fill rates have produced results similar to those of the studies using electronic monitoring. Dolder and colleagues<sup>13</sup> examined 288 Veterans Affairs outpatients with schizophrenia or schizoaffective

disorder to determine if adherence rates were improved with second-generation compared with first-generation oral antipsychotics. At 12 months, cumulative mean gap ratios were 23.2% for first-generation agents and 14.1% for second-generation agents, meaning that patients treated with first-generation agents were without medication on average 7 days per month compared with 4 days per month for those taking second-generation agents. Subsequent studies have found similar rates of adherence but have not detected an advantage with second-generation versus first-generation antipsychotics. For example, using a Medicaid claims database, Gilmer and colleagues<sup>14</sup> found that 41% of patients with schizophrenia were adherent, 24% were non-adherent, 16% were partially adherent, and 19% were “excess fillers” of antipsychotic prescriptions, with no difference between first- and second-generation antipsychotics. Adherent patients had the lowest rate of hospitalization, nonadherent patients had the highest rate, and patients who were partially adherent or were excess fillers had intermediate rates of hospitalization.

Studies of adherence rates with antipsychotic medication have generally combined patients with diagnoses of schizophrenia and schizoaffective disorder. Only 1 published study<sup>15</sup> differentiated adherence between the 2 diagnostic groups. Using Medicaid claims data from 55,330 patients, Olfson and colleagues did not find a significant difference in adherence with antipsychotic medication between diagnostic groups; 59.2% of patients with schizoaffective disorder versus 63.8% of patients with schizophrenia achieved at least 70% adherence, according to antipsychotic prescription refill rates. The nonsignificantly lower adherence rate among schizoaffective disorder patients occurred in the presence of higher rates of prescriptions for mood stabilizers, antidepressants, and anxiolytics and higher rates of substance abuse and hospitalization. Given the greater rates of potential cumulative medication side effects and of psychiatric morbidity, the small decrement in antipsychotic adherence rates associated with schizoaffective disorder is not surprising. Estimates of adherence with long-term treatment with mood stabilizers have ranged from 20% to 60%,<sup>16</sup> and the median time to discontinuation after patients with bipolar disorder were first prescribed lithium was approximately 2 months in one study.<sup>17</sup> Substance abuse substantially increases the risk of nonadherence in patients with bipolar disorder or schizophrenia; in one study,<sup>18</sup> substance abuse decreased lifetime adherence with mood stabilizers from 82.5% to 65.5%.

### CONSEQUENCES OF NONADHERENCE

Partial adherence or nonadherence has been associated with a range of poor clinical outcomes in patients with schizophrenia and schizoaffective disorder, including higher rates of emergency room visits, hospitalizations, and suicide.<sup>14,19–21</sup> Robinson and colleagues<sup>22</sup> found that nonadherence following a first episode of psychosis increased the risk of relapse 5-fold. Of great concern is the impact of

**Table 1. Factors That Contribute to Nonadherence to Treatment**

Willingness to take the medication
Poor illness insight
Patient's health belief model
Perceived benefits vs disadvantages
Attitudes and subjective response to medication, side effects, risks, and costs
Family/cultural health belief model
Lack of autonomy/perceived coercion
Poor therapeutic alliance
Stigma
Prior history of nonadherence
Ability to comply with treatment
Cognitive dysfunction
Disorganization
Comorbidities (eg, substance misuse, depression)
Complex drug regimen/polypharmacy
Lack of continuity of care
Lack of family support
Lack of supervision
Limited finances
Limited access to services

surreptitious nonadherence upon clinical decision making. In the presence of undetected partial compliance, attempts by clinicians to titrate medication dosage can result in excessive doses when the patient resumes full adherence. Additionally, clinicians may incorrectly attribute a patient's relapse to a lack of efficacy of the current medication and switch antipsychotics or institute polypharmacy, whereas the more appropriate response would be to improve adherence and maintain monotherapy. This dilemma can often be resolved by close supervision of medication administration using rapidly-dissolving formulations or depot injections, which allow the clinician to know with certainty whether adherence has played a role in relapse.

### FACTORS CONTRIBUTING TO NONADHERENCE

In a review of almost 12,000 publications about adherence in medical and psychiatric patients, Blackwell<sup>23</sup> concluded that adherence was related to patient satisfaction with treatment, continuity of care, and insight regarding the need for treatment. Nonadherence was associated with chronicity of illness, complicated treatment regimens, medication side effects, and poor social functioning. Adherence in individuals with schizophrenia and schizoaffective disorder appears to reflect a similar constellation of factors, although greater limitations in insight and psychosocial functioning may produce greater challenges. In addition, nonadherence among patients with schizophrenia and schizoaffective disorder has been associated with cognitive impairment, depression, substance abuse, inadequate discharge planning or aftercare environment, poor therapeutic alliance, and lack of family support (Table 1).<sup>24–28</sup>

Studies of hypertension have established that increased complexity of medication schedules adversely affects adherence rates. This relationship was also demonstrated by Diaz and colleagues<sup>29</sup> in a sample of 50 patients with schizophrenia

and schizoaffective disorder whose medication adherence was monitored by MEMS caps for 3 months following discharge from the hospital. Adherence rates were significantly higher among patients taking an antipsychotic with once-daily dosing (62%) compared with those taking a medication requiring twice-daily dosing (26%).

Other studies of factors that mediate adherence have used less reliable measures, such as patient self-report and clinician estimates of adherence. However, attitude and insight are mediating factors that can be measured. Negative patient attitudes toward medication, which can be measured by the Drug Attitude Inventory,<sup>30</sup> consistently predict nonadherence and drug discontinuation.<sup>31</sup> Freudenreich and colleagues<sup>32</sup> found that positive attitudes toward antipsychotic medications did not differ between first- and second-generation agents but were most strongly predicted by the level of insight into the illness, as measured by the Scale for the Unawareness of Illness.<sup>33</sup> Examples of items assessing insight and attitude in the Drug Attitude Inventory include “By staying on my medication I can prevent getting sick” and “The good things about my medication outweigh the bad.” Insight, in turn, has been reported to be predicted not by IQ or level of executive functioning but by greater levels of depression and anxiety.<sup>34</sup> It is unclear whether patients become dysphoric in response to the realization that they have a serious mental illness or the presence of dysphoria makes psychotic patients more receptive to the possibility that they have a psychiatric illness. The relationship between insight and dysphoria has been found to be mediated by ratings of perceived stigma, possibly suggesting that dysphoria is a consequence of insight in individuals with negative views regarding the consequences of having the illness.<sup>35</sup>

Freudenreich and colleagues<sup>32</sup> found that negative attitudes according to the Drug Attitude Inventory reflected the presence of side effects (ie, “Medications make me feel tired and sluggish”), lack of insight (ie, “I take my medication only when I am sick”), and issues of autonomy (ie, “It is unnatural to be controlled by my medication”). Paradoxically, patients with higher levels of functioning as measured by the Quality of Life Scale had more negative attitudes toward medication. While clinicians might hope that recovered patients will attribute their functional success to treatment, as they reenter society, they may be more likely to resent medication and the stigma of continued psychiatric treatment; hence, close monitoring and support are critical during this transitional period. The importance of autonomy was also demonstrated by Day and colleagues,<sup>36</sup> who found that perceived coercion was associated with nonadherence, in addition to poor insight and a negative therapeutic alliance.

By applying the health belief model to adherence in schizophrenia and schizoaffective disorder, clinicians understand that patients make decisions about adherence based on an assessment of perceived benefits versus disadvantages (ie, risks, side effects, and costs) of the medication—a process that occurs within the context of the patient’s capacity to recognize that he or she has an illness in need of treatment and the capacity to perceive therapeutic benefit.<sup>37</sup> Clinicians

need to appreciate that this decision process reflects the patient’s perceptions and not the clinician’s expectations. For example, in a 12-month longitudinal study<sup>38</sup> of 409 patients with chronic schizophrenia, clinician assessment of adherence did not correlate with patient self-report. Clinicians rated adherence highest in patients who were treated for a long duration and with second-generation antipsychotics. In contrast, patient self-reports of adherence were predicted by severity of side effects. Only ratings of psychopathology predicted both clinician and patient estimates of adherence.

Assessment of treatment benefits versus adverse effects is illustrated by a path analysis study by Staring and colleagues,<sup>39</sup> who examined the relationship between medication compliance (as rated by a caregiver) and the patient’s perceived quality of life. Increased medication compliance was associated not only with a reduction in positive symptoms but also with increased side effects. Increased burden of side effects had a greater impact on patients’ ratings of their quality of life than did improvement in psychotic symptoms, thus negating any potential positive relationship between compliance and quality of life. From a clinician’s vantage point, the reduction in psychotic symptoms might constitute a clear benefit of treatment. Only by fully understanding the patient’s experience of side effects and of symptomatic relief can a clinician appreciate the processes underlying drug attitude, insight, and adherence.

Individual patients differ substantially in their vulnerability to specific drug side effects and in the distress that they experience in response to the side effect. Antipsychotic side effects that have been associated with poor adherence include parkinsonism, akathisia, sedation, weight gain, and sexual side effects.<sup>40</sup> Sexual side effects have been reported to be particularly distressing in young male patients.<sup>31</sup> Weiden and colleagues<sup>41</sup> found that obese patients treated with antipsychotics reported high rates of dissatisfaction and recent nonadherence. In the Clinical Antipsychotic Trials of Intervention Effectiveness (CATIE) study, 14.9% of subjects discontinued their initial medication due to intolerable side effects; weight gain and extrapyramidal side effects were common causes of discontinuation, whereas sedation was less commonly associated with discontinuation.<sup>42</sup> In a study<sup>43</sup> of patients with first-episode schizophrenia and schizoaffective disorder, extrapyramidal side effects also significantly increased medication discontinuation during the first year of treatment.

## INTERVENTIONS TO IMPROVE ADHERENCE

Several strategies are available to aid clinicians in improving patients’ treatment adherence (Table 2). In a review of 39 randomized controlled studies published from 1967 to 2001, McDonald and colleagues<sup>44(p2868)</sup> concluded, “Current methods of improving medication adherence for chronic health problems are mostly complex, labor-intensive, and not predictably effective.” Most of the effective interventions included combinations of simplified dosing, information, counseling, reminders, self-monitoring, reinforcement,



**Table 2. Interventions to Enhance Adherence to Treatment**


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Use multiple sources of information to estimate the patient's degree of adherence
Work on the treatment alliance as a key determinant of adherence
Assess the patient for risk factors associated with nonadherence (eg, negative attitude toward taking medication, limited illness insight, environmental barriers)
Appreciate the fluctuating nature of adherence and flexibly adjust interventions
Incorporate the patient's point of view and preferences when possible; aim to maximize the perceived benefit and minimize side effects of treatment
Simplify the drug regimen
Educate and involve family members
Match the intervention to factors contributing to nonadherence
For example:
For poor illness insight + negative attitudes toward taking medication, use psychoeducation + CBT
For impaired cognition + disorganization, use pill boxes, increased support, DOT, + depot medication

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Abbreviations: CBT = cognitive-behavioral therapy, DOT = directly observed therapy.

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family therapy, and additional supervision or attention. Dolder and colleagues<sup>45</sup> reviewed interventions in patients with schizophrenia and schizoaffective disorder and found that 15 of 23 interventions moderately improved adherence. Interventions limited to education were least effective. Successful interventions combined educational, behavioral, and affective strategies, were of longer duration, and emphasized the therapeutic alliance.

In a recent editorial, Cutler and Everett<sup>1</sup> recommended 4 health policy changes to encourage adherence. They suggested removal of financial barriers such as pharmacy copayments, the development of information systems to track pharmacy refills and other relevant data, the remuneration of health care providers by outcomes rather than by fee-for-service, and an increase in the use of screening tools to identify patients at risk for nonadherence.

For the clinician working with a patient with schizoaffective disorder, the therapeutic alliance is pivotal in helping the patient accept and adhere to antipsychotic treatment. Principles of compliance therapy, a cognitive-behavioral therapy approach developed by Kemp and colleagues,<sup>46</sup> include facilitating the patient's acknowledgment of illness, making analogies with maintenance treatment for medical illness (eg, high blood pressure), encouraging the patient to express his or her misgivings about medications, and guiding the process of weighing therapeutic benefits against side effects. Similarly, the patient's life goals should be explored, and the role of medication in achieving these goals should be emphasized. This approach draws heavily on the principles of motivational interviewing, which examines a patient's motivation to change behavior and was developed for the treatment of substance abuse.<sup>47</sup> In a randomized controlled trial,<sup>48</sup> 4 to 6 sessions of compliance therapy significantly improved compliance and reduced relapse during 18 months following hospital discharge in 74 schizophrenia and schizoaffective disorder patients. However, a large multicenter effectiveness trial<sup>49</sup> failed to find greater benefit of

compliance therapy when compared with health education. Cognitive-behavioral therapy has been reported to improve adherence in several controlled trials.<sup>50</sup>

Shared decision making has received growing support in all areas of medicine. This patient-centered approach emphasizes providing information about medications to the patient, understanding the patient's values and beliefs about medication, and involving the patient in the decision-making process. The dialogue between the clinician and the patient should be revisited regularly during the course of long-term treatment.

Medications should be selected on an individualized basis to minimize side effects and maximize perceived benefit. A patient with schizophrenia or schizoaffective disorder may derive a sense of well-being from medication, particularly if insomnia, anxiety, or depression are alleviated in addition to the antipsychotic effects.<sup>51</sup> A positive sense of well-being may follow immediately from medication effects on insomnia and anxiety, but considerable time and effort may be required to help a patient recognize delayed benefits, such as the prevention of relapse or improvement in social and occupational functioning. Some patients may engage in multiple episodes of nonadherence that result in relapse before the benefit of medication is acknowledged. An even higher level of insight is required to link medication to the attainment of life goals, which is an appropriate focus for cognitive-behavioral therapy.

Other interventions to enhance adherence emphasize involvement of family members and other caregivers as well as behavioral approaches. Simplification of medication regimens, ideally to a schedule of once-daily dosing, along with supervised medication administration, can markedly improve adherence. Directly observed therapy is widely used in the treatment of infectious disorders like tuberculosis or HIV in which adherence is critical.<sup>52,53</sup> In directly observed therapy, a trained health care worker delivers and verifies the medication, checks with the patient for side effects, watches the patient swallow the medication, and documents the visit. For psychotic patients who do not live in a supervised setting, directly observed therapy can be implemented by visiting nurses or outreach workers.

In a novel approach, Cramer and Rosenheck<sup>54</sup> used electronic monitoring with MEMS caps to review adherence with patients at monthly visits. Records of bottle openings were used in a nonjudgmental, problem-solving approach to identify obstacles to adherence. In a controlled trial,<sup>54</sup> patients randomly assigned to receive this intervention exhibited significantly higher rates of adherence (76% vs 57%) at 6 months compared with patients receiving treatment as usual.

Cognitive adaptation training, an intervention that uses environmental supports such as signs, checklists, and alarms to cue and sequence adaptive behaviors in the home, was shown to be more effective than treatment as usual in 95 outpatients with schizophrenia.<sup>55</sup>

A new approach, information technology-aided relapse prevention, uses a cellular phone-based telemonitoring

system that allows clinicians to monitor adherence and early signs of relapse. In one study,<sup>56</sup> weekly remote monitoring reduced hospitalizations by 60% compared with a historical control.

An additional potential approach is the use of financial incentives, which have been used successfully to improve adherence in patients with substance abuse and nonpsychiatric disorders.<sup>57</sup> Two small, uncontrolled trials<sup>57,58</sup> of financial incentives have shown promise in patients with schizophrenia, but ethical concerns must be addressed if this strategy is to be used in patients with major psychiatric disorders.<sup>59,60</sup>

Several studies have demonstrated lower rates of relapse with first-generation depot antipsychotics compared with oral agents, particularly after the first year of follow-up.<sup>61</sup> Depot administration lowers relapse by improving adherence and minimizes cumulative antipsychotic exposure; the use of depot agents provides clinicians with accurate information about patients' level of adherence. Studies comparing depot preparations of second-generation antipsychotics with oral agents are in progress but have not yet been reported. Finally, long-acting oral medications, such as aripiprazole, which has a half-life of about 72 hours, achieve steady-state blood levels that are less affected by missed doses than medications with short half-lives.<sup>62</sup>

To better match specific adherence-enhancing interventions with specific patient needs, Velligan and colleagues<sup>63</sup> recently proposed a 3-tier approach to adherence that is based on Gordon's 3 levels of prevention used in medicine (ie, universal, selective, and indicated prevention).<sup>64</sup> In this model, all patients with schizophrenia receive universal prevention in the form of psychoeducation and systems-based interventions that are thought to generally improve and support adherence. Those patients at high risk for nonadherence receive stepped-up care in the form of selected interventions (eg, pill boxes, enlisting family help). Patients known to be nonadherent receive interventions like directly observed therapy.

## SUMMARY

Poor adherence is common in patients with schizophrenia and schizoaffective disorder, may vary considerably over time, and is difficult for clinicians to detect. In the face of unrecognized incomplete adherence, attempts by the clinician to titrate the medication dose may be counterproductive and responses to relapse may be misguided. Many factors contribute to nonadherence, including poor insight, a negative attitude toward medication, substance abuse, and disorganization. Clinicians need to understand the patient's assessment of medication benefits and disadvantages and work in collaboration with the patient to select medication that will provide a sense of well-being while minimizing side effects. Ultimately, the challenge is to help patients appreciate the long-term benefits of medication, including relapse prevention, improved functioning, and attainment of their life goals.

**Drug names:** aripiprazole (Abilify).

**Disclosure of off-label usage:** Dr Goff has determined that, to the best of his knowledge, no investigational information about pharmaceutical agents that is outside US Food and Drug Administration–approved labeling has been presented in this article.

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