the most tolerable and therapeutic regimen. Given the adverse side effects of antipsychotics, this would be a welcome advance.

Many factors influence adherence. Many of these factors are impossible to intervene in and change. Clinician-patient communication can be observed, and it is possible to intervene to change communication. However, the focus should be on adherence to joint decisions rather than adherence to medication per se.

References

1. Zolnieriek KB, Dimatteo MR. Physician communication and patient adherence to treatment: a meta-analysis. *Med Care* 2009; 47:826-34.
2. Thompson L, McCabe R. The effect of clinician-patient alliance and communication on treatment adherence in mental health care: a systematic review. *BMC Psychiatry* 2012;12:87.
3. McCabe R, Bullenkamp J, Hansson L et al. The therapeutic relationship and adherence to antipsychotic medication in schizophrenia. *PLoS One* 2012;7:e36080.
4. Hamann J, Langer B, Winkler V et al. Shared decision-making for in-patients with schizophrenia. *Acta Psychiatr Scand* 2006;114:265-73.
5. Hamann J, Cohen R, Leucht S et al. Shared decision-making and long-term outcome in schizophrenia treatment. *J Clin Psychiatry* 2007;68:992-7.
6. McCabe R, Khanom H, Bailey P et al. Shared decision-making in ongoing outpatient psychiatric treatment. *Patient Educ Couns* 2013;91:326-8.
7. Goss C, Moretti F, Mazzi MA et al. Involving patients in decisions during psychiatric visits. *Br J Psychiatry* 2008; 193:416-21.
8. Goossensen A, Zijlstra P, Koopmanschap M. Measuring shared decision-making process in psychiatry: skills versus patient satisfaction. *Patient Educ Couns* 2007; 67:50-6.
9. Read J. Coping with coming off: mind's research into the experience of people trying to come off psychiatric drugs. London: Mind Publications, 2005.
10. McCabe R, Khanom H, Bailey P et al. Shared decision-making in ongoing outpatient psychiatric treatment. *Pat Educ Couns* 2013;91:326-8.

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Adherence/compliance: a multifaceted challenge

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Adherence or compliance, whichever term one prefers, presents medicine with a number of challenges, nicely detailed in Kane et al's review. Evident when reading between the lines, although not explicitly stated, is the fact that compliance behaviour is difficult to study. Apart from the prescription of depot antipsychotics, which is really the only way to monitor compliance reliably, there is still no foolproof way to measure adherence. This methodological shortcoming explains why not much progress has been made in the past decades in establishing the foundations of compliance behaviour and the determinants of impaired adherence and, based on the knowledge of both of these, in conducting clinical studies which can shed light on the usefulness of compliance enhancing interventions.

As most of the relevant evidence has been summarized by Kane et al, I am only left to add or underscore a few points. Firstly, with respect to factors jeopardizing compliance, a few thoughts on attitudes towards treatment war-

rant consideration. Obviously, patients' attitudes impinge significantly on adherence behaviour, but one must also consider the attitudes of the patients' social environment, including relatives, friends and other patients. The latter, for instance, will likely relate their personal experiences with treatment modalities to the patient in question and may thereby shape his/her attitudes and compliance behaviour. Concerned relatives, having studied Internet sources of often dubious reliability, are also likely to interact in this process. Importantly, and this is often overlooked, the involvement of multiprofessional treatment teams poses a specific challenge in the context of compliance behaviour, as team members, if they are not well aligned with regard to treatment means and goals, may undeliberately convey mixed messages to patients, which may contribute to patients' insecurities with regard to treatment priorities. Par example, a social worker will focus on a patient's ability to hold a job, while a psychotherapist will emphasize coping skills and a nurse will make sure that medications are taken regularly. Accordingly, a patient will be confronted with three different intervention priorities

and may therefore give undue preference to one over the other. As much as this is depicted in black and white, clinical reality often comes close, and this must be accounted for in team-based approaches.

Patients' attitudes can be influenced by rational or seemingly irrational factors. On the rational side, they can be influenced by previous experience with an antipsychotic or by information acquired via various media. On the irrational side, attitudes can be even influenced, for instance, by the shape or colour of medications or by the assumption that antipsychotics given in doses of 5 or 10 mg/day are "less strong" or "less dangerous" than those prescribed in daily doses of 600 or 800 mg/day.

The conviction to have to take drugs regularly is also driven by the seriousness attributed to one's illness, and schizophrenia patients have been shown to take their illness less seriously than, for instance, people with diabetes or hypertension (1). Furthermore, all antipsychotics block reward dopamine systems, thereby inducing negative reinforcement.

Paradoxically, some side effects may have a compliance improving impact.

For instance, the increased attention given to patients who report adverse events may lead to more and longer contact with the treating clinician, thereby exerting a positive impact on the doctor/patient relationship.

It is key to understand that compliance is a dynamic treatment variable. Adherence behaviour changes over time and is also dependent on treatment circumstances. Therefore, compliance monitoring must be an ongoing treatment measure. As patients quickly learn to give expected and accepted answers to questions like “Do you take your medications regularly?”,

alternative approaches have been suggested. These include questions like “When you forget your medication, what do you do?” or “Do you think that taking medication over a prolonged period of time is potentially harmful?” (2).

All of the issues described above, together with those reviewed by Kane et al, underscore the key importance of two factors to ensure optimal compliance behaviour. Both are based on communications strategies, namely, a good clinician/patient relationship and the provision of sound information. Both need to be an integral and

continuous component of the management of patients suffering from severe mental disorders.

References

1. Rettenbacher MA, Burns T, Kemmler G et al. Schizophrenia: attitudes of patients and professional carers towards the illness and antipsychotic medication. *Pharmacopsychiatry* 2004;37:103-9.
2. Fleischhacker WW, Hofer A, Hummer M. Managing schizophrenia: the compliance challenge, 2nd ed. London: Current Medicine Group, 2007.

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Practical strategies for improving adherence to medication and outcomes

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Kane et al provide an expert overview that identifies the many causes of the problem of non-adherence, and describes ways of addressing it. However, practitioners and treatment teams may still be uncertain as to how to proceed in the everyday treatment environment. Arguably, every act of prescribing in a shared-decision making dialogue should be accompanied by adherence assessment and often intervention. Non-adherence is not the exception but the rule for long-standing disorders in which medication is taken to prevent the onset or recurrence of symptoms (1). In this commentary, we focus on practical steps that can be taken by administrators, treatment teams and patients to improve adherence and outcomes.

One possible approach involves increasing the use of long-acting injectable (LAI) antipsychotic medications. While pharmacological treat-

ments are not the only approaches to address adherence, there are multiple benefits to using LAIs in the context of shared decision-making. Indeed, practitioners cannot prescribe the right medications at the right doses in an atmosphere of uncertain adherence. A recent study of outpatients with schizophrenia found that, while both home delivered environmental supports or electronic medication support significantly improved adherence, symptoms and outcomes remained essentially unchanged (2). These data have several interpretations, but one that is particularly distressing. Without good data about what our patients are actually doing with their medications, we may be making very poor treatment decisions, including prescribing unnecessary increases in doses, concomitant medications and medication switches. For example, raising a dose may be completely unnecessary if an individual missed 30% of his/her doses in the week prior to the visit.

LAIs can be used to disentangle lack of efficacy from poor adherence when patients appear to be inadequately responsive to medication (3). The value of using LAIs to improve the information on which treatment decisions are

based appears to be underestimated, particularly in the US, where prescriptions for LAIs represent less than 10% of those for antipsychotic medications (4). Mirror image studies demonstrate clear improvements in outcomes and decreases in inpatient costs with the use of injectable medications (5). Kane et al's article nicely explains why such dramatic results are unlikely in randomized controlled trials. As we enter a new era in health care focused on value for services, efficient and accountable care, and need to demonstrate improved outcomes, it is likely that there may be a role for mechanisms to increase the appropriate use of LAIs for patients with schizophrenia. Mechanisms might include peer review and clinician or care system incentives for minimizing barriers to LAI access.

There are many reasons for the underutilization of LAIs, but prominent among them is the discomfort on the part of prescribers in making an offer for these medications (6,7). Linguistic analysis of offers of LAIs in community mental health centers demonstrated lack of fluency and other signs of discomfort on the part of practitioners, and a tendency to start an offer by referring to treatment modality