

A practical new approach to medication adherence in HIV

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There is no “magic bullet” to use in improving patients’ adherence to highly active antiretroviral therapy (HAART). Patients may not take their medications correctly for many reasons: side effects, financial hardship, lack of understanding of the dosing schedule, non-belief in the treatment. For this reason, adherence improvement interventions often call for a multifaceted approach.¹ Once a patient and his/her medical provider overcome the barriers of tolerability, access, knowledge, and motivation, the work of adherence support should not stop. In fact, that is when the work of adherence support is just getting started. The most common reason patients of all types give for missing doses of medicine is simply forgetting to take the medicine.² When healthcare workers look beyond the medicine list and into the daily lives of their patients, they can offer practical solutions that will help patients achieve desired levels of adherence in the real world.

Research on HAART adherence consistently identifies certain patient characteristics as being associated with poor adherence. Among them are low literacy, psychosocial issues, cognitive impairment, and active substance abuse.³ It would be a daunting and time-consuming task to modify any of these patient factors in the hopes of improving adherence. A more practical approach is to focus on making small changes in a patient’s daily life that support medication-taking.

Russell, Ruppap, and Matteson recently described a new framework for designing adherence interventions. They put forth an approach based on personal systems in which healthcare workers and patients work together to integrate medication-taking behavior into the patient’s daily routines.⁴ Many adherence interventions address patients’ understanding of medication directions and motivation to stay on treatment.¹ The personal systems approach focuses on the next step of putting a medication regimen into action in the real world circumstances of a patient’s daily life.³

The group recommends a four-step process. First, the healthcare worker asks the patient to describe his/her daily routines and identify environmental factors that may influence medication-taking. The healthcare worker proposes modifications to these routines that aim to increase adherence. Once the healthcare worker and patient have agreed on routine modifications, the second step in the process is for the patient to implement the changes. During implementation, the third step is to track medication adherence. The fourth step is to evaluate what effect, if any, the routine modifications had on adherence.⁴ This cycle may continue for several iterations until desired adherence levels are achieved.

A central idea of this framework is to link medication-taking behavior to the daily routines that the patient has already established. Though not previously elucidated in the same way as Russell, Ruppap, and Matteson, this approach has been used in HAART

adherence counseling for many years. Patients are often encouraged to use small modifications to improve adherence, such as leaving medications where they will be seen, setting alarms, or leaving notes.

Collaborative adherence planning allows healthcare workers to confirm the patient's understanding of his/her regimen, while empowering the patient to be involved in treatment decisions. The patient is relieved of the burden of trying to make sense of medication directions that he/she may be faced with sorting out each day. This approach can be especially helpful for patients with non-traditional schedules. Taking the time to learn about a patient's daily routine allows healthcare workers to tailor their recommendations to suit an individual's unique circumstances. Allowing a patient to be actively involved in making decisions about medication encourages him/her to take ownership of his/her treatment plan. Moreover, a collaborative approach to adherence planning is desirable because it does not blame the patient for sub-optimal adherence.⁵

The first step in the personal systems framework is to identify the daily routines and environmental factors that may impact a patient's medication-taking behavior.⁴ This information can be discerned through patient interview using leading questions. Examples of these types of questions include:

- Tell me about your schedule in a regular day.
- How does your routine change on the weekend or days when you don't work?
- When do you eat during a normal day?
- Where do you keep your medications?
- Do you live with anyone? Are they aware that you are on HAART?
- What time do you usually wake up? ...go to bed?
- You are supposed to take this medicine daily (at bedtime, with food, twice daily, etc.). What time(s) will be easiest for you to remember to take it?
- How will you remember to take your medicine?

Once the healthcare worker has an understanding of a patient's routines and environmental factors, he/she can make specific recommendations to use or modify those factors to increase adherence.⁴ When developing an adherence plan with a patient, it is best to make the plan as specific as possible, including the time of day that medicines will be taken and the other circumstances that may surround it, for example: taking pills at 7:00 am because that is when the patient wakes up, or keeping pills near the TV so the patient will remember to take them when he watches the news at 10:00 pm. While these may seem like common sense solutions to those of us who think about medicines for a living, patients (especially those who have never had to manage treatment for a chronic condition) may need extra guidance in developing such an adherence strategy.

Healthcare workers often have tools at their disposal to support adherence, such as pill boxes and pill charts. The personal systems approach encourages applying these tools based on an individual's needs when it is practical to integrate them into a patient's daily life. Pill boxes can be helpful for patients who cannot remember whether they took

their most recent dose of medicine or those who get confused by the different directions for multiple medications. Pill charts can be a useful visual reminder for patients who have limited literacy skills. Alarms can serve as reminders for patients who are prone to forgetting doses. In particular, alarms set on cell phones are useful for patients with busy schedules outside of the home. Reminder notes left in places that patients will look as part of the daily routine, such as the bathroom mirror, television, or coffee maker, can also mitigate forgetfulness. Another tool in the personal systems approach to adherence improvement is a supportive person such as a spouse, family member, friend, or sponsor with whom the patient has daily contact.⁴ Contact does not have to be in person; it can also occur via telephone or internet. A supportive person identified by the patient can aid in remembering and managing medications.

Steps three and four of the personal systems framework involve collection and evaluation of adherence data.⁴ This feedback is used to determine if the adherence plan is successful and to adjust the plan if necessary. Russell *et al.* found that participants using the “continuous self-improvement” adherence intervention had sustained adherence improvement after just one counseling session.⁵

In both of these studies, Medication Event Monitoring System (MEMS) bottle caps were used to electronically record subjects’ medication-taking behaviors.^{4,5} The use of MEMS caps outside of a research setting is usually cost-prohibitive. As an alternative, healthcare workers may have patients use logs to record when medications are taken or ask the patient to give a verbal report of how many doses were missed in the past week. Additionally, laboratory values such as viral load and CD4 count could be used as a proxy for adherence. However, there are drawbacks to this strategy, including long intervals between labs and failure to account for medication resistance.

For those of us who think and talk about HAART regimens every day at work, it is easy to disconnectedly recite dosing instructions from memory. The personal systems approach to adherence improvement encourages health care workers to pause when counseling patients and consider how these instructions will be applied in a real world setting. Patients who are not accustomed to managing treatment for a chronic condition like HIV will benefit from individualized coaching and planning to put their medication list into action. By monitoring implementation of the adherence plan and troubleshooting as necessary, healthcare workers can help patients achieve adherence success and reach the goals of their treatment.❖

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