



Ix for Rx Adherence

Research and Strategies for Improving Medication Adherence with Information Therapy

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Introduction

Medication adherence, the degree to which patients take medications as prescribed, is an ongoing problem with no simple or easy solution. The purpose of this paper is to consider the issue of medication adherence through the lens of information therapy (Ix[®]). The Ix approach offers a framework for thinking through adherence from a patient perspective.

Information therapy, by definition, takes into account the patient experience; patient needs and preferences, especially regarding information, are top-of-mind throughout the process of care:

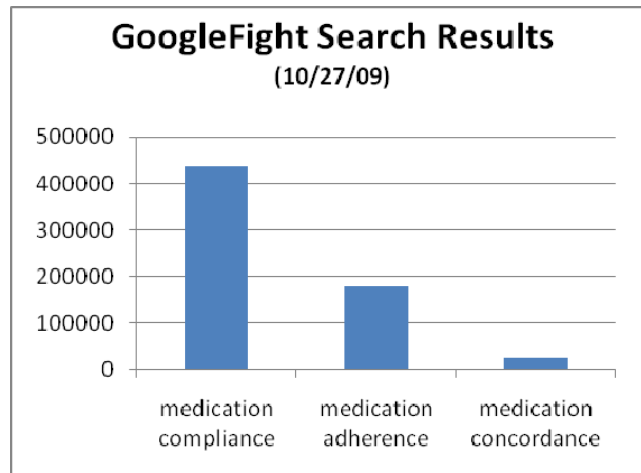
Information therapy (Ix) is the timely prescription and availability of evidence-based health information to meet individuals' specific needs and support sound decision making. Ix prescriptions are specifically targeted to an individual's needs at a particular moment in care and are delivered as part of the process of care.

It is likely that barriers to medication adherence include a lack of information and explanation from a patient, or consumer, perspective. After all, if medication adherence, or 'compliance' was as simple as patients following orders, perhaps more patients would do it.

A Note on Terminology

Several terms are used to talk about patient adherence to medication. Although the most commonly used term appears to be 'medication compliance,' the term medication adherence has less of a judgmental connotation. In practice, the words are used interchangeably. Yet a third term is 'medication concordance.'

Medication concordance is slightly different than compliance and adherence in that it signifies that the doctor and patient have come to an agreement about therapeutic goals¹.



Medication concordance most precisely describes the patient-centered end goal of finding treatment that is both mutually agreeable and appropriate.

Reasons for Non-Adherence

The causes of non-adherence are complex and varied². Medications may be too expensive. The recommended regimens may be too complex. Patients may fail to adhere due to forgetfulness or because they do not believe the medications are necessary. Perhaps the patient understands that the medication is necessary, but is concerned about possible side effects.

A number of causes of medication non-adherence related to a lack of information effectively communicated to the patient/consumer.

- poor instructions/understanding of regimen
- poor memory

- patient lack of understanding of need for treatment
- poor provider-patient relationship
- patient disagreement with need for treatment
- patient rejection or denial of diagnosis
- asymptomatic condition and/or long treatment duration (hypertension)
- early abatement of symptoms (antibiotic therapy)
- delayed onset (antidepressant therapy)

Medication non-adherence is even more challenging for asymptomatic conditions and treatments of prolonged duration, including hypertension, antibiotic therapy, and antidepressant therapy. Other issues, such as physical and mental impairment, also complicate medication adherence. These barriers may include visual impairment, manual dexterity limitations, or mental health issues.

Current Approaches to Increasing Medication Adherence

In a review of the adherence literature, almost all effective interventions were complex and included combinations of the following²:

- more convenient care
- information
- reminders
- self-monitoring
- reinforcement
- counseling
- family therapy
- psychological therapy
- crisis intervention
- manual telephone follow-up
- supportive care
- mailed interventions
- other forms of additional supervision or attention

Treatment of non-adherence generally follows four steps: detection of non-adherence, determining cause(s), developing and implementing a plan to improve adherence, and assessment. Current approaches typically focus on the mechanics of measuring adherence without fully taking into account patient values, preferences, comprehension, and other challenges unique to individual patients.

Traditional medication adherence programs typically deal with patients from this limited perspective. Addressing cost, accessibility, and memory issues represents only part of the adherence solution. There may be deeper underlying reasons why a patient is not taking medications as recommended. Considering medication adherence from an Ix perspective helps to reframe the issue, putting patients (and their perspectives) at the center.

Information Therapy and Medication Adherence

Information therapy provides a patient-centered framework through which to consider medication adherence approaches. Ix involves prescribing the right information to the right patient at the right time in order to support the patient in making health-related decisions³. This can involve shared decision-making (participating in the process of selecting a treatment) and behavior change science (providing information tailored to patient degree of readiness for change). It is also consistent with the patient-centered medical home approach to health care delivery. Ix is tailored to each patient's specific information needs and is tailored to match their learning styles and preferences.

Barriers to Adherence from a Patient Perspective

Approaching medication adherence and management from a patient perspective broadens the way that medication adherence is conceptualized. It offers a different view – a more comprehensive view – of the patient and the wide range of factors that, in various combinations, affect medication adherence and behavior.

Conventional adherence approaches are based on a number of assumptions about the patient. The health care provider or system assumes the patient:

1. is aware of the diagnosis
2. understands the diagnosis
3. accepts the diagnosis
4. agrees with the necessity of recommended treatment
5. understands the importance of following recommended treatment
6. intends to follow the recommended treatment
7. will be able to follow the recommended treatment

Conventional approaches use the last step as a starting point, but patient barriers may include any combination of factors listed.



Ix: the Right Information

Ix involves providing the right information to the right patient at the right time. Starting with the right information, it is:

- accurate
- comprehensive
- credible
- understandable
- actionable

Ix: the Right Person

The right information is tailored to the right patient. Ix is tailored to individual patient needs based on the following information:

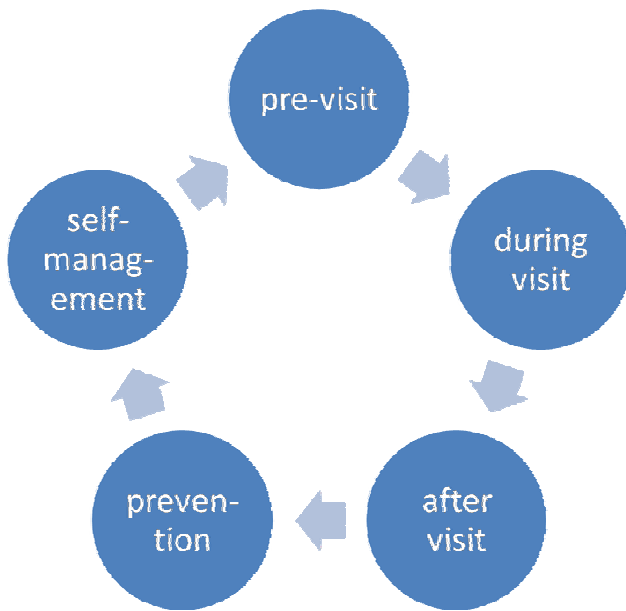
- demographics
- learning style/preference
- literacy level
- stage of behavior change
- health beliefs
- comorbidity

Ix: the Right Time

Last, but not least, Ix is provided to the patient at the right time, meaning it is targeted to the appropriate moment in care:

- prevention
- screening/pre-diagnosis
- diagnosis
- acute care/decision making
- chronic care/secondary prevention
- end-of-life care

Continuity of patient care is enhanced by addressing all possible moments in a continuous cycle of care. This includes what happens outside of the medical visit. This is where Ix plays an important role.



Diagnosis: Knowing, Understanding, and Accepting

Prerequisites to understanding a diagnosis are being informed of the diagnosis and remembering the diagnosis. In some cases, less than half (41 percent) of patients were able to state their diagnosis at hospital discharge⁴. It is possible for test results to be returned after a patient is discharged from the hospital and for the results not to be communicated to physicians or patients⁵.

Even if the name of the diagnosis is remembered, the patient may not understand the meaning of the diagnosis. They may not understand the implications of the diagnosis for their current and future health.

A patient may not be ready to accept a new diagnosis, especially one that may impact their daily life. They may have more immediate concerns (e.g., paying for housing, children with special needs, or being unemployed) that detract from their ability to fully consider the impact of the diagnosis on their life.

Treatment: Knowing, Understanding, and Accepting

The transtheoretical model (TTM) of behavior change can be applied to medication adherence. Patients tend to go through stages of acceptance before changing behavior (in this case, adhering to medication) and finally, if successful, maintaining behavior change. The stages are pre-contemplation, contemplation, preparation, action, and maintenance⁶.

Patient health beliefs and values are also relevant to treatment acceptance. Patients may be less likely to adhere to a program that conflicts with their values. Research tends to focus on how to convince patients to adhere to treatment recommendations regardless of whether or not the recommendations are consistent with the values of the individual patient.

A study by Carling, et al⁷, examined the effects of various risk formats, but also measured the degree to which resulting decisions were consistent with patient values. Certain risk formats were successful at convincing patients of their necessity, at least for the short-term, even if the treatment option was in conflict with individual patient values⁷. More research is needed in this area. For example, it is possible that some “non-adherent” patients are simply acting in accordance with their values.

Rather than attempting to convince patients to behave in specific ways, it may be more beneficial in the long run to respect patient preferences and explore other treatment options that are more consistent with patient preferences and values. It may make more sense to engage patients in a slightly less ‘optimal’ (at least from the standpoint of the clinician) treatment plan if it might make a difference when it comes to following through with treatment recommendations (adherence).

A Story of How Assumptions Prevent Optimal Medication Adherence

Neil Calman, MD, while sharing insights on meaningful use, discussed some of the unanticipated, but welcome impacts health information technology can have on the way physicians practice⁴. Since electronic notes are ultimately accessible to patients, physicians may be more likely to probe for detail. For example, in the past a physician note may have simply stated “patient non-compliant.” With the knowledge that the patient will review what is written, now a doctor is more likely to ask for more information, which has led, for example, to learning that the patient took the first two pills and felt sick, as a result. This provides a place to start a conversation about modifying the treatment regimen.

Adapted from [post on IxCenter Blog \(http://ixcenterblog.org/archives/740\)](http://ixcenterblog.org/archives/740).

This is where the term ‘treatment concordance’ becomes especially relevant. It is possible, that if the patient is treated as a partner in evaluating and deciding upon a treatment option, that ‘adherence’ rates would be higher.

Ix Interventions to Increase Medication Adherence

Basic Ix interventions include clinical reminders directed at patients. To the extent that medication and treatment adherence is simply a function of patient recall, patients sometimes need to be reminded about what they are supposed to do. Reminder messaging can include patient-directed reminders for upcoming appointments, recommended screenings, and medication refill reminders.

Research on patient-directed reminders is promising. Traditionally, clinical message

alerts have been directed at health care providers rather than patients. A 2008 study compared the effectiveness of physician reminders with and without patient-directed reminders. Patients who received the reminders directly were 12.5% more likely to receive the recommended screenings⁸.

Ix medication reminders can be delivered through multiple communications tools.

- interactive voice response (IVR)/automated phone
- Email/secure messaging
- Nurse call centers
- EMR-PHR applications
- e-Prescribing tools

Beyond reminder messaging, basic Ix interventions include pre-visit preparation (e.g., a reminder to bring a list of current medications to an upcoming appointment) and after-visit summaries⁹ (AVSs), which include medication lists and information pertaining to newly prescribed medications.

The AVS provides an opportunity to document instructions for taking medications. This is particularly relevant for cases where optimal dosing will be determined over time. This would also be an opportunity to specify the expected duration of treatment, whether refills are optional, and circumstances requiring follow-up.

Advanced Ix Interventions

Ix includes more advanced, interactive approaches to help manage multiple medications. Patients may also have concerns about medication side effects and interactions. Tools like doublecheckmd and PharmaSurveyor allow consumers to learn about and identify common drug side effects and interactions. Patients experiencing a possible side effect like fatigue can look up their medication to see if that is a possible side effect.

In the case of multiple medications, the tools will alert them to the possibility of increased side effects due to particular combinations of medications. For example, fatigue may be a minor side effect of two different medications in one person's medication regimen. Patients taking multiple medications with similar side effect profiles may experience more extreme side effects.

These tools allow the patient to access complex information that was previously unavailable. Addressing side effect and interaction issues could be the difference between adherence and non-adherence in patients who otherwise understand the importance of treatment. Patient access to side effect information may also lead to early identification of adverse drug events.

Advanced Information Tailoring

The most advanced Ix takes into account the

stage of behavior change of an individual, along with other traits that influence patient decisions and behavior. Patient interventions based on the trans-theoretical model (TTM) of behavior change are promising. Two programs based on the model, the Pro-Change Program for High Blood Pressure Medication and the Pro-Change Program for Cholesterol medication, have shown positive results with medication adherence. Findings from studies on both programs suggest that individualized, stage-matched interventions play a role in improving medication adherence^{10,11}.

Each program prescribes information tailored to the appropriate stage of behavior change. For example, if a patient is newly diagnosed and has not yet filled their new prescription, information about the importance of treatment is appropriate. If another patient is having difficulty remembering to take the medication as prescribed, strategies to help them remember every dose is appropriate.

Conclusion

Historically, strategies to improve medication adherence have been predominantly provider-centric, relying on the premise that adherence can be largely addressed by changing clinician behavior. Research makes clear that, given the brevity of clinical encounters, patients need more than a few minutes to process sometimes complex medical information and even begin to think about how it might impact their lives.

An information therapy approach, combined with the other patient-centered models, offers a framework through which to view patient experience and behavior within the context of medication adherence. The Ix approach takes into account patient needs and preferences throughout the process of care, facilitating continuous care.

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