MEDICATION ADHERENCE – IMPROVING HEALTH OUTCOMES
A Resource from the American College of Preventive Medicine

A Clinical Reference
The following Clinical Reference document provides the evidence to support the Medication Adherence Time Tool.

1. Introduction – Dimensions of Patient Adherence
2. Challenges to Prescribers in a Multidimensional Situation
3. Defining, Differentiating and Choosing Terminology
4. Nonadherence Statistics
5. Prescriber’s Role in Adherence
6. Provider Strategies to Improving Adherence
7. Provider/Patient Conversations
8. The Bottom Line
9. Resources
10. References
1. INTRODUCTION – DIMENSIONS OF PATIENT ADHERENCE

Patient adherence to a medication regimen is central to good patient outcomes. Central to adherence is the quality of the provider/patient relationship. Effective provider/patient communication is empirically linked to positive outcomes of care including patient satisfaction, health status, recall of information, and adherence [1][2]. Provider discussions help patients understand their illness and weigh the risks and benefits of treatment.

Healthcare providers (as part of a healthcare team within the health system) are an integral part of the five interacting dimensions of medication adherence identified by the World Health Organization (WHO) (See Figure 1 and Table 1), which include social/economic factors, medical condition-related factors, therapy-related factors, and patient behaviors. Identifying strategies for improving medication adherence are the responsibility of all involved, but the focus of this Time Tool is on the provider’s role in medication adherence.

*Figure 1. Five Interacting Dimensions of Adherence [3]*
Table 1. Factors Reported to Affect Adherence [4]

<table>
<thead>
<tr>
<th>1. SOCIAL AND ECONOMIC DIMENSION</th>
<th>4. THERAPY-RELATED DIMENSION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limited English language proficiency</td>
<td>Complexity of medication regimen (number of daily doses; number of concurrent medications)</td>
</tr>
<tr>
<td>Low health literacy</td>
<td>Treatment requires mastery of certain techniques (injections, inhalers)</td>
</tr>
<tr>
<td>Lack of family or social support network</td>
<td>Duration of therapy</td>
</tr>
<tr>
<td>Unstable living conditions; homelessness</td>
<td>Frequent changes in medication regimen</td>
</tr>
<tr>
<td>Burdensome schedule</td>
<td>Lack of immediate benefit of therapy</td>
</tr>
<tr>
<td>Limited access to health care facilities</td>
<td>Medications with social stigma attached to use</td>
</tr>
<tr>
<td>Lack of health care insurance</td>
<td>Actual or perceived unpleasant side effects</td>
</tr>
<tr>
<td>Inability or difficulty accessing pharmacy</td>
<td>Treatment interferes with lifestyle or requires significant behavioral changes</td>
</tr>
<tr>
<td>Medication cost</td>
<td></td>
</tr>
<tr>
<td>Cultural and lay beliefs about illness and treatment</td>
<td></td>
</tr>
<tr>
<td>Elder abuse</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. HEALTH CARE SYSTEM DIMENSION</th>
<th>5. PATIENT-RELATED DIMENSION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provider-patient relationship</td>
<td><strong>Physical Factors</strong></td>
</tr>
<tr>
<td>Provider communication skills (contributing to lack of patient knowledge or understanding of the treatment regimen)</td>
<td>Visual impairment</td>
</tr>
<tr>
<td>Disparity between the health beliefs of the health care provider and those of the patient</td>
<td>Hearing impairment</td>
</tr>
<tr>
<td>Lack of positive reinforcement from the health care provider</td>
<td>Cognitive impairment</td>
</tr>
<tr>
<td>Weak capacity of the system to educate patients and provide follow-up</td>
<td>Impaired mobility or dexterity</td>
</tr>
<tr>
<td>Lack of knowledge on adherence and of effective interventions for improving it</td>
<td>Swallowing problems</td>
</tr>
<tr>
<td>Patient information materials written at too high literacy level</td>
<td></td>
</tr>
<tr>
<td>Restricted formularies; changing medications covered on formularies</td>
<td><strong>Psychological/Behavioral Factors</strong></td>
</tr>
<tr>
<td>High drug costs, copayments, or both</td>
<td>Knowledge about disease</td>
</tr>
<tr>
<td>Poor access or missed appointments</td>
<td>Perceived risk/susceptibility to disease</td>
</tr>
<tr>
<td>Long wait times</td>
<td>Understanding reason medication is needed</td>
</tr>
<tr>
<td>Lack of continuity of care</td>
<td>Expectations or attitudes toward treatment</td>
</tr>
<tr>
<td></td>
<td>Perceived benefit of treatment</td>
</tr>
<tr>
<td></td>
<td>Confidence in ability to follow treatment regimen</td>
</tr>
<tr>
<td></td>
<td>Motivation</td>
</tr>
<tr>
<td></td>
<td>Fear of possible adverse effects</td>
</tr>
<tr>
<td></td>
<td>Fear of dependence</td>
</tr>
<tr>
<td></td>
<td>Feeling stigmatized by the disease</td>
</tr>
<tr>
<td></td>
<td>Frustration with health care providers</td>
</tr>
<tr>
<td></td>
<td>Psychosocial stress, anxiety, anger</td>
</tr>
<tr>
<td></td>
<td>Alcohol or substance abuse</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3. CONDITION-RELATED DIMENSION</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Chronic conditions</td>
<td></td>
</tr>
<tr>
<td>Lack of symptoms</td>
<td></td>
</tr>
<tr>
<td>Severity of symptoms</td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td></td>
</tr>
<tr>
<td>Psychotic disorders</td>
<td></td>
</tr>
<tr>
<td>Mental retardation/developmental disability</td>
<td></td>
</tr>
</tbody>
</table>
2. CHALLENGES TO PRESCRIBERS IN A MULTIDIMENSIONAL SITUATION

Poor adherence to prescribed medication is associated with reduced treatment benefits and can obscure the clinician’s assessment of therapeutic effectiveness. Nonadherence is thought to account for 30% to 50% of treatment failures [5]. Nonadherence leads to worse medical treatment outcomes; higher, avoidable hospitalization rates; institutionalization for the frail elderly; and increased healthcare costs [5][6][7]. Attention to adherence is especially important in the current economic climate where we are seeing an uptick in patients foregoing medications by not filling or refilling prescriptions and hoarding medications due to high costs [8]. Considering all of the factors listed in Table 1 that contribute to poor adherence, on the surface, it would appear that the provider role is very small. Yet this is not the case.

Physicians play an integral role in medication adherence. Patients who trust their physicians have better two-way communication with their physician. Trust and communication are two elements critical in optimizing adherence. Numerous studies show that physician trust is more important than treatment satisfaction in predicting adherence to prescribed therapy and overall satisfaction with care [8]. Physician trust correlates positively with acceptance of new medications, intention to follow physician instructions, perceived effectiveness of care, and improvements in self-reported health status.

Adherence is the key mediator between medical practice and patient outcomes. [9]

A recent meta-analysis of physician communication and patient adherence to treatment found that there is a 19% higher risk of nonadherence among patients whose physician communicates poorly than among patients whose physician communicates well [1]. Statistically, the odds of patient adherence are 2.26 times higher if a physician communicates well. This translates into more than 183 million medical visits that need not take place if strong interpersonal physician/patient communication occurs [1].

Communication contributes to a patient’s understanding of illness and the risks and benefits of treatment. Hence, the major challenge is to improve: [1].

- Verbal and nonverbal communication (patient-centered care)
- Interviewing skills (improved competency)
- Discussions and provide greater transmission of information (task-oriented behavior)
- Continuous expressions of empathy and concern (psychosocial behavior)
- Partnerships and participatory decision-making (patient-centered care)

3. DEFINING, DIFFERENTIATING AND CHOOSING TERMINOLOGY

Using the words adherence or compliance is often confusing and only relevant to understanding the literature about the subject. Hopefully, as providers try to communicate with patients, these terms will rarely enter the conversation. Rather, providers will probably ask, “Are you taking your medication as directed?” or “Did you take all of your pills?”

The term adherence is often used in place of compliance as it is viewed as a nonjudgmental statement of fact rather than of blame of the patient, prescriber, or treatment. However, Cramer’s recent (2008) review of terminology found no authoritative support for the assumption that adherence is a less derogatory term than compliance or whether it is preferred by patients [10]. Feinstein (1990) quizzically remarks about the superiority of terms:

“Adherence seems too sticky. Fidelity has too many connotations. Maintenance suggests a repair crew. Although, adherence has its adherents, compliance continues to be the most popular term.” [11]
Adherence: Synonym for compliance. The extent to which a patient’s behavior (in terms of taking medication, following a diet, modifying habits, or attending clinics) coincides with medical or health advice. If a person is prescribed an antibiotic with a dosage of 1 tablet four times a day for a week, but only takes 2 tablets a day for 5 days, adherence is 36% (10/28) [12].

Compliance versus persistence. Compliance, which is a synonym for adherence, suggests a process in which dutiful patients passively follow the advice of their providers and is sometimes substituted with the word adherence as the trend moves toward patient-centered care. Persistence is the duration of time from initiation to discontinuation of therapy. Continuing to take any amount of the medication is consistent with the definition of persistence [10].

Concordance: A synonym for adherence or compliance or agreement between the provider and the patient; patient/provider concordance is the extent to which patients and their providers agree on whether, when, and how a medication should be taken.

Nonadherence: Nonadherence encompasses a wide range of behaviors (See Table 2), both intentional and unintentional, that leads to either underuse or overuse of prescription medications. Underuse includes:

- Delay or not filling a prescription (primary medication non-adherence)
- Not picking up a prescription
- Skipping doses
- Splitting pills, stopping a medication early
- Not refilling a prescription

<table>
<thead>
<tr>
<th>Table 2. Predictors of Medication Nonadherence [4]</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Low literacy/limited English language proficiency</td>
</tr>
<tr>
<td>• Homelessness</td>
</tr>
<tr>
<td>• Depression</td>
</tr>
<tr>
<td>• Psychiatric disease</td>
</tr>
<tr>
<td>• Substance abuse</td>
</tr>
<tr>
<td>• Lower cognitive function or cognitive impairment</td>
</tr>
<tr>
<td>• Forgetfulness</td>
</tr>
<tr>
<td>• Anger, psychological stress, anxiety</td>
</tr>
<tr>
<td>• Lack of insight into illness</td>
</tr>
<tr>
<td>• Lack of belief in benefit of treatment</td>
</tr>
<tr>
<td>• Belief medications are not important or are harmful</td>
</tr>
<tr>
<td>• Complexity of medication regimen</td>
</tr>
<tr>
<td>• Tired of taking medications</td>
</tr>
<tr>
<td>• Inconvenience of medication regimen</td>
</tr>
<tr>
<td>• Side effects or fear of medication side effects</td>
</tr>
<tr>
<td>• Cost of medication, copayment, or both</td>
</tr>
<tr>
<td>• Barriers to access to care or medications</td>
</tr>
<tr>
<td>• Inadequate follow-up or discharge planning</td>
</tr>
<tr>
<td>• Missed appointments</td>
</tr>
</tbody>
</table>
4. NONADHERENCE STATISTICS

Poor adherence to medical treatment is widespread and well recognized, as are its consequences of poor health outcomes and increased healthcare costs (see Figure 2) [3, 13]. Nonadherence to medications is estimated to cause 125,000 deaths annually [13]. Consider these other statistics:

- Overall, about 20% to 50% of patients are nonadherent to medical therapy [14]
- People with chronic conditions only take about half of their prescribed medicine [5]
- Adherence to treatment regimens for high blood pressures is estimated to be between 50 and 70 percent [15]
- 1 in 5 patients started on warfarin therapy for atrial fibrillation discontinue therapy within 1 year
  - Underuse of anticoagulant therapy for prevention of thromboembolism is attributed to the risk factors of younger age, male gender, low overall stroke risk, poor cognitive function, homelessness, higher educational attainment, employment and reluctant receptivity of medical information [16]
- Rates of adherence have not changed much in the last 3 decades, despite WHO and Institute of Medicine (IOM) improvement goals
- Overall satisfaction of care is not typically a determining factor in medication adherence
- Adherence drops when there are long waiting times at clinics or long time lapses between appointments [17]
- Patients with psychiatric disabilities are less likely to be compliant

![Figure 2. Gap Between a Written Prescription and Actual Medication Use](Source: National Association of Chain Drug Stores, Pharmacies: Improving Health, Reducing Costs, July 2010. Based on IMS Health data) [18]

- Nonadherence results in an economic burden of $100 to $300 billion per year [19]
  - Annually, nonadherence costs $2,000 per patient in physician visits [20]
  - The rate of nonadherence is expected to increase as the burden of chronic disease increases
- Nonadherence accounts for 10% to 25% of hospital and nursing home admissions (Figure 3). Recent research has found medication nonadherence to result in:
  - 5.4 times increased risk of hospitalization, rehospitalization, or premature death for patients with high blood pressure [21]
  - 2.5 times increased risk of hospitalization for patients with diabetes [22]
  - More than 40 percent of nursing home admissions [22]
5. PRESCRIBERS ROLE IN ADHERENCE

Healthcare providers play a unique and important role in assisting patients to carry out healthy behaviors [13] and a patient’s beliefs about the benefits and risks of medicines influences whether or not they take prescribed medication [5]. Another factor is patient/provider concordance—the extent to which patients and their providers agree on whether, when, and how a medication should be taken. Hence, adherence requires the patient to believe there is a benefit to the medicine being prescribed and agree with instructions on how to take it. Importantly, there cannot be barriers, such as cost, which will prevent medication access. The prescriber’s role is to gain trust from the patient, understand the patient’s belief system, find a way to treat within this belief system, interactively obtain agreement from the patient on when and how to take prescribed medication, and discuss cost issues to insure the medication is obtained and that instructions are followed. Building trust and developing skills for successful provider/patient communications demand time, effort, knowledge, and practice.

- No doubt the most often expressed barrier to improving provider/patient communication is time. Studies have shown that some patients are interrupted by their physician after an average of 22 seconds. It has also been shown that if allowed to speak freely, the average patient would speak initially for less than two minutes. Patience and a free flowing conversation can result in a long-term payoff of better adherence resulting in better patient outcomes, fewer follow-up visits, and shorter, more focused subsequent interactions.

In addition to prescribers, the office staff has a role in boosting patient adherence to medication. Wroth et al, (2006) evaluated correlates of medication adherence in a rural setting and found that when patients felt welcomed and comfortable by the staff, they were more likely to fill their prescriptions [5].

<table>
<thead>
<tr>
<th>Adherence</th>
<th>CHF</th>
<th>Diabetes</th>
<th>Hypertension</th>
<th>Hypercholesterolemia</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-19%*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20-39%*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>40-59%*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60-79%*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80-100%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*P<0.05 compared to 80-100%

Expectation Without Intervention Is A Prescription For Failure

Providers expect their patients to follow their directions for taking medication explicitly. However, according to research, even medical professionals don’t have a perfect record when it comes to medication taking. One survey found that adherence was 77% for short-term medications and 84% for long-term medications among doctors and nurses [23]. It seems unreasonable, then, to expect that patients can achieve better adherence than providers without provider intervention.
6. PROVIDER STRATEGIES TO IMPROVING ADHERENCE

While medication adherence is a complex topic, interventions to promote adherence can and should be simple. Numerous studies show that simple interventions are the most effective in fostering medication adherence [24]. Atreja, et al (2005) grouped adherence-promoting interventions under the mnemonic SIMPLE, which helps categorize efforts to improve patient adherence. The mnemonic is easy to remember: [13]

S simplify regimen
I impart knowledge
M modify patient beliefs and human behavior
P provide communication and trust
L leave the bias
E evaluate adherence

S – Simplify the regimen. The complexity of treatment can affect adherence. Providers should try to simplify the regimen whenever possible [15].

- Adjust timing, frequency, amount, and dosage. Medications taken once-a-day are preferred, but if the increased cost of a once-a-day is a major barrier, this is not a solution
- Match regimen to patients’ activities of daily living. If taking fewer pills is not an option, a provider should try to match medication taking to activities the patient does daily, such as taking pills at a meal time or before bed
- Recommend all medications be taken at same time of day (if there are no interactions or food absorption issues)
- Avoid prescribing medications with special requirements (bedtime dosing, avoiding meals)
- Investigate customized packing for patients (dose dispensing units of medication)
- Break the medication regimen down into simple steps that can be introduced sequentially.
  - Be sure the patient understands every step
- Encourage the use of adherence aids such as medication organizers (pill reminders) and alarms [16]
- Consider changing the situation (more conversations, more repetition, change treatment) versus changing the patient. In other words, a provider should adjust the treatment to the patient versus the patient to the treatment [24]

I – Impart knowledge. Adherence is enhanced when a patient understands their condition and the benefits of treatment. Patient education alone is not effective in improving adherence, but change can occur when education is combined with regimen simplification and effective provider/patient communication.

- Focus on patient-provider shared decision making
- Encourage discussions with physician, nurse, and pharmacist
- Provide clear instructions (written and verbal) for all prescriptions
  - Limit instructions to 3 or 4 major points
  - Use simple, everyday language
  - Use written information or pamphlets and verbal education at all encounters
- Involve family and friends in the discussion when appropriate
- Provide quality web sites for patients wishing to access health education information from the Internet
- Suggest computerized self-instruction for complex chronic conditions
- Provide concrete advice for how to cope with medication costs
- Reinforce all discussions often, especially for low-literacy patients

© 2011. American College of Preventive Medicine. All rights reserved.
M – Modify patient beliefs and human behavior. Accessing perceived susceptibility, severity, benefit, and barriers is necessary in all patient encounters since knowledge alone is insufficient to enhance adherence, especially those that involve complex behavioral change [13].

- Empower patients to self-manage their condition [25]
  - Ask patients about their needs. Create an open dialogue with each patient and ask about his or her expectations, needs, and experiences in taking medication.
  - Ask patients what might help them become and remain adherent [24]
- Ensure that patients understand they will be at risk if they don’t take their medication
- Ask patients to describe the consequences of not taking their medication
- Have patients restate the positive benefits of taking their medication
- Address fears and concerns (perceived barriers) of taking the medication
- Consider the use of contingency contracting. A contingency contract is an agreement between a patient and provider, which states behavioral goals for the patient and reinforces or rewards that the patient will receive contingent upon achievement of these goals.
- Provide rewards for adherence
  - Reward self-efficacy with praise
  - Incent with coupons, certificates, points programs, or food, candy, or other small items such as pocket size hand sanitizer, reduced visit frequency, or partial payment for medical equipment

P – Provide communication and trust. Modifying patient beliefs is only possible when a high level of patient trust exists. A physician’s communication style is one of the strongest predictors of a patient’s trust in his or her physician. Many physicians are weak in communications. Consider these statistics: [13].

- At least 50% of patients leave the office not understanding what they have been told
- Physicians miss 50% of psychosocial and psychiatric problems due to poor communication skills
- Physicians interrupt patients on an average of 22 seconds into the patients’ descriptions of the presenting problems
- 54% of patient problems and 45% of patient concerns are neither elicited by the physician nor disclosed by the patient
- 71% of patients cited poor relationships as a reason for their malpractice claims

Ways to improve communication include: [8]

- Improve interviewing skills. Providers can improve in all areas of data gathering, patient education and counseling, rapport building, facilitation and patient activation.
- Practice active listening. Active listening is an interactive process with the intent to listen for meaning and requires careful attention to what a patient is saying. It includes techniques such as:
  - Confirming the patient’s message has been heard (feedback, questions, prompts for clarity, and other signs of having received the message)
  - Accurately paraphrasing patient remarks
  - Using verbal and nonverbal cues to show understanding and empathy
  - Giving feedback to the patient during a discussion
  - Furthering the dialogue to gain more information
  - Providing the needed responses and watching for patient acceptance or reluctance
- Provide emotional support. A provider should make sure to treat the whole patient and not just the disease. Make the patient feel unique and special. Offer empathy early on in the discussion. Offer physical touch to show caring, deliver compassion, respond to emotional needs, and maintain hope and a positive attitude.
- Provide clear, direct, and thorough information. A provider should remember to speak in simple language at the patient’s linguistic level. Speak directly, don’t use euphemisms or avoid touchy subjects. Give brief but complete instructions. Have the patient repeat the instructions.
- Elicit patient’s input in treatment decisions. A spectrum of patient autonomy exists in active involvement in making decisions. [26]. Some patients want complete authority in deciding their therapy while others do not wish to be involved at all. Younger patients and those with higher education are more likely to want to be involved. In general, the more severe the disease, the
less autonomy is desired. These types of patient preferences need to be identified early on. This is an unmet competency for many physicians that can easily be overcome by using the Degner scale (See Resources) [26].

**Decision-Making Lexicon**

**Informed Decision** – one where a reasonable choice is made by a reasonable individual using relevant information about the advantages and disadvantages of all the possible courses of action, in accordance with the individual’s beliefs

**Shared Decision** – one where the provider and patient share all stages of the decision making process simultaneously. In the purest form both provider and patient reveal treatment preferences and both agree on the decision to implement.

- **Allow adequate time for patients to ask questions.** Increase a patient’s comfort level with asking questions by
  - Creating a safe environment where patients feel comfortable talking openly
  - Using plain language instead of technical language or medical jargon
  - Sitting down (instead of standing) to achieve eye level with a patient
  - Using pictograms (see Resources)
  - Allowing patients to write down instructions
  - Asking patients to “teach back” the instructions given to them

- **Build trust.** Providers can take this brief test to decide if they need to improve patient trust [8]. A provider may rate themselves (or ask patients to rate them) on a scale of 1 to 5 (1=strongly disagree; 5=strongly agree) on the five statements below. A higher score indicates a higher trust level.

<table>
<thead>
<tr>
<th>Scale</th>
<th>Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5</td>
<td>I feel my patients can tell me anything and I don’t judge them or cut them off</td>
</tr>
<tr>
<td>1 2 3 4 5</td>
<td>The majority of my patients trust my judgment about their medical care</td>
</tr>
<tr>
<td>1 2 3 4 5</td>
<td>I know the costs of the medications I prescribe and consider cost as a factor in decision-making</td>
</tr>
<tr>
<td>1 2 3 4 5</td>
<td>I do not withhold bad news from my patients, minimize their situation, or condone (ignore) bad health behaviors</td>
</tr>
<tr>
<td>1 2 3 4 5</td>
<td>If I make a mistake in treatment, I do not try to hide it from my patient</td>
</tr>
</tbody>
</table>

Read a few articles from the bibliography listed below and list other practice changes a provider could make to increase patient/provider trust.

**Practice changes I could make to increase patient trust:**

1. __________________________________________
2. __________________________________________
3. __________________________________________

Providers can also involve their office staff in activities that improve communication with their patients and, in turn, improve adherence (See Table 3).

<table>
<thead>
<tr>
<th>Table 3. Activities Healthcare Provider Office Staff Can Use to Enhance Adherence [27]</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Improve the convenience of scheduling appointments, referrals, refills</td>
</tr>
<tr>
<td>• Remind patients to refill early</td>
</tr>
<tr>
<td>• Install interactive voice response systems</td>
</tr>
<tr>
<td>• Manage compliance-linked financial incentives</td>
</tr>
<tr>
<td>• Provide at home self-management programs</td>
</tr>
<tr>
<td>• Provide counseling, repeated monitoring and feedback</td>
</tr>
<tr>
<td>• Use automated telephone or computer-assisted patient monitoring</td>
</tr>
<tr>
<td>• Use manual telephone follow-up</td>
</tr>
<tr>
<td>• Deliver appointment and prescription refill reminders</td>
</tr>
<tr>
<td>• Send patient mailings that reinforce medication taking</td>
</tr>
<tr>
<td>• Teach behavioral strategies</td>
</tr>
</tbody>
</table>

**L – Leave the bias.** A large body of evidence concludes that ethnic, minority, and socioeconomic disparities related to health outcomes exist across all disease conditions and types of care, including preventive care. Patients in this population experience lower levels of patient-centered communication and greater verbal passivity with physicians than Caucasian patients and patients with higher levels of education [2]. Physician interventions that increase patient/physician partnership are important strategies to overcome disparities. [2]

- Learn more about low health literacy and how it affects patient outcomes (see Resources)
  - Incorporate new knowledge into your practice
- Examine self-efficacy regarding care of ethnically and socially diverse patient populations
- Review communication style to see if it is patient-centered
- Acknowledge biases in medical decision-making (intentional or unintentional)
- Address dissonance of patient-provider race/ethnicity and language [28]
  - Know the overall demographics of a patient population
  - Learn some Spanish if there is a large Spanish speaking population
  - Take extra time to overcome cultural barriers
  - Specifically ask about attitudes, beliefs and cultural norms about medication
  - Use culturally and linguistically appropriate targeted patient interventions that increase engagement, activation and empowerment
  - Tailor education to the patient’s level of understanding
    - Use engaging and user friendly “photonovelas” in patient education (See Resources for sample)

**E – Evaluating adherence.** The problem of nonadherence is uniformly underestimated by providers. If it isn’t suspected, it can’t be corrected. Measuring adherence can lead to better patient compliance.

- Self-reports are the most commonly used tool in measuring adherence. Ask patients simply and directly if they are following their drug regimen.
• Ask about adherence behavior at every encounter
• Ferret out adherence barriers and lack of receptivity to medical information
• If self-report still leaves questions about adherence try pill counting or measuring serum or urine drug levels
• Periodically review patient’s medication containers, noting renewal dates

Visit the web site below for a Medication Nonadherence Risk Assessment tool that includes a 1-page step-by-step instruction sheet and a 2-page patient assessment form. The instruction sheet provides sample conversation scripts similar to the scripts in the next section Provider/Patient Conversations as a dialogue aid.

American Society of Consultant Pharmacists Foundation.
Adult Meducation: Improving Medication Adherence in Older Adults

Don’t limit interventions to patients who are not compliant as patients once compliant often become non-adherent down the line [24]. Focus adherence interventions on the specific drugs that have the worst outcome from nonadherence (e.g., death from not taking warfarin).

7. PROVIDER/PATIENT CONVERSATIONS

Most patients will talk initially for less than 2 minutes when describing their condition or problem. Providers should try not to interrupt. If a patient is having difficulty following his or her regimen, a simple solution is generally the best. Focusing on patient-centered care will involve the patient in decision-making. A provider can try these SIMPLE verbal scripts when interacting with patients.

S – Simplifying the Regimen

• “I believe that switching you to a once a day medication will be easier to manage. Unfortunately, it will cost a bit more but will provide better control and will provide you with added convenience. Is this an option that you would be willing to consider?” (Let the patient decide on cost benefit)
• “In order for this medication to work effectively, you will need to take this medication twice a day. Can you take it at breakfast and dinner to help you remember or is there a more convenient time?” (Match pill taking to activities of daily living)
• “Tell me about all the pills you take and let’s determine together if you could take them all in the morning.” (Simplify the time of day the patient must focus on medication taking)
• “You need two different medications to control your condition. I can prescribe two different pills or one pill that is a combination product. The combination product will most likely cost more. Which option would best suit your needs?” (Let the patient decide if cost or convenience is more important)
• “Go ahead and fill all three of these prescriptions. Start on this first medication tomorrow. Then add in the next two when you feel comfortable but not later than 3 weeks from today.” (Gradually step a patient into a complex regimen)

I – Imparting Knowledge

• “Here is your prescription and here are written directions. Take two pills twice a day. In starting this new regimen, how will you incorporate these medications into your daily routine?” (Allow the patient to repeat back instructions in their own words)
• “The pharmacy will put directions on the pill bottle, but here are some pictures [pictograms] you can use as a reminder. Attach this to a calendar and mark off when you take each pill.” (Relay information at the patients’ level)
• “Here is a booklet that describes your condition. Keep it handy, as I have marked your pill taking instructions on the back. My office phone is also here; call if you have any questions.” (Reinforce verbal instructions with written information; provide access for questions)

• “It can sometimes be difficult to remember to take all of your medications. Is it possible to ask your wife to help you remember to take this medication?” (Involve family members)

• “It’s important to take this medication every day. However, if the cost imposes a financial hardship on you, please let me know right away and we can look at other options.” (Help optimize adherence by addressing cost)

M – Modifying Beliefs

• “Have you ever taken a medication every day and do you think you will have any problems with this?” (Ask about your patient’s needs)

• “After this surgery, you will need to take 3 additional pills. What can I do to help you with this change?” (Tailor conversations to specific patient needs)

• “Can you tell me what you think will happen if you stop taking your medication?” (Ensure patients know their risks)

• “Do you have any fears or concerns about the medication I have prescribed?” (Identify perceived barriers)

• “Most of my patients on long-term therapy make a contract with me to always take their medication because it can often be difficult to remember to take medication(s) each day. In order to create a partnership between myself and my patients, I offer rewards for participating in the contract. Would you like to participate?” (Provide contingency contracts and rewards)

P – Providing Communication

• “So what I hear you saying is that your stomach hurts only at night.” (Confirm patient message)

• “You told me about the hot flashes and the frequent night sweats; now tell me how often this is bothering you.” (Paraphrase patient remarks)

• “I can see that you are in pain; it must be very uncomfortable.” (Provide empathy)

• “You said you get heartburn from this medication so you stopped taking it. I’m glad you tried it and also glad you brought this to my attention because we can find another medication without this side effect.” (Give feedback to the patient)

• “Hmm, I hear you, but I want to know more. Can you describe yesterday’s symptoms?” (Further the dialogue)

• “It appears like you are uncomfortable with my suggestion. What part of this plan doesn’t work for you?” (Watch for patient acceptance; involve patient in decision making)

L – Leaving the Bias

• “Buenos Dias and good morning. Let’s sit down and have a chat.” (Relate to patient’s demographic)

• “I’m happy to see you Mrs. ____________; the next 15 minutes are yours so take your time and tell me why you are here today.” (Take extra time to overcome cultural barriers)

• “I’m interested in what your family thinks about you having to take 3 new medications. Can you tell me?” (Elicit cultural norms)

• “Let’s play a game. I’m going to point to one of these pills and I want you to tell me what time of day you take it.” (Use interactive engagement and linguistically appropriate patient interventions)
• “I have a booklet to further explain the decisions we made today (flip through photonovela patient guide with patient). Will you be able to read this story this week?” (Tailor education to patient’s level of understanding)

E – Evaluating Adherence [13]

• “Do you ever forget to take your medications?” (Ask direct questions)
• “Do you ever find yourself not as careful about taking your medications?” (Ask about adherence often)
• “When you feel better, do you sometimes stop taking medication?” (Recognize lack of receptivity)
• “Sometimes, when you feel worse, do you stop taking your medicine?” (Identify adherence barriers)

Not taking medication as prescribed—taking either too little, or too much, for too short, or too long a period, at the wrong time or in an ineffective way—can have negative consequences for patients, healthcare, and the economy. World Health Organization

8. THE BOTTOM LINE

Adherence to prescribed medication regimens is critical to patient outcomes but consistent adherence is hard to achieve. Nonadherence is a multidimensional problem and providers have a role in improving the statistics. By following the SIMPLE approach providers can modify their practices and practice patterns to enhance patient compliance. This approach includes Simplifying the regimen, Imparting knowledge, Modifying patient beliefs, Providing communication and building trust, Leaving bias behind, and Evaluating adherence. Provider training in adherence strategies is needed and should focus on communication skills, cultural sensitivity, and patient-centered interviewing as competencies that will improve patients’ adherence.

Research shows that provider efforts can only go so far in improving medication adherence in the clinical setting [12]. Improving adherence is a complex and variable process. Multidisciplinary efforts are needed to modify lifestyle behaviors. Nevertheless, this should not deter prescribers from working with their patients to achieve maximum understanding and implementation of optimal health recommendations. To accomplish maximum adherence, those who use adherence-increasing strategies have a responsibility to ensure the patient’s safety and comprehension.

9. RESOURCES


United States Pharmacopoeia (USP). A library of over 80 free pictograms to describe the most common medication taking instructions (4 samples shown here)

Degner scale for eliciting patient’s input in treatment decision-making.

- I prefer to make the final selection about which treatment I receive.
- I prefer to make the final selection of my treatment after seriously considering my doctor’s opinion.
- I prefer that my doctor and I share responsibility for deciding which treatment is best for me.
- I prefer that my doctor make the final decision about which treatment will be used, but seriously considers my opinion.
- I prefer to leave all decisions regarding my treatment to my doctor.


Photonovelas (or fotonovelas) are like comic books, but they are compiled using photographs and captions. They are a highly visual and creative form of getting a message across to a diverse population. Based on the revolutionary Brazilian educator Paulo Freire’s concepts of participatory education, the process of creating the photonovelas allows learners to define the content and outcome of their own learning by creating a story line about an important topic or theme and then acting it out; using pictures as a means to express a story and message. Essentially, the genre of the photonovela challenges a more traditional educational approach because it has the learner as the main subject in the pedagogical process.
Photonovelas are an effective way of teaching patients, since they combine story telling with pictures. Visit these specific resources on photonovelas:

- [http://www.augercommunications.com/Photonovels.html](http://www.augercommunications.com/Photonovels.html)
- [http://jdc.jefferson.edu/cgi/viewcontent.cgi?article=1003&context=photonovels](http://jdc.jefferson.edu/cgi/viewcontent.cgi?article=1003&context=photonovels)
- [http://www.tahud.org.tr/uploads/sunumlar/2809d1288234fa5ce42b99ed1f1067c7667ee95e.pdf](http://www.tahud.org.tr/uploads/sunumlar/2809d1288234fa5ce42b99ed1f1067c7667ee95e.pdf)

10. REFERENCES

   a. Systematic review of randomised trials of interventions to assist patients to follow prescriptions for medications.
19. DiMatteo MR. Variation in patients’ adherence to medical recommendations. Medical Care. 2004; 42(3); 200-209.

Acknowledgement of Support
The American College of Preventive Medicine acknowledges the Pharmaceutical Research and Manufacturers of America (PhRMA) for its support of this resource through an unrestricted educational grant.