



Improving Medication Adherence in Older Adults: What Can We Do?

Medication non-adherence is the failure to take medications as prescribed. This may be willful or inadvertent, and can include failing to initially fill or refill a prescription; discontinuing a medication before the course of therapy is complete; taking more or less of a medication than prescribed; or taking a dose at the wrong time.¹

Why are older adults at a higher risk for medication non-adherence?

Many factors may influence medication compliance in older adults, including unclear instructions, inadequate patient education, lack of patient involvement in the treatment plan, medication cost, side effects and the complexity of the dosing regimen. Studies have shown that between 40% and 75% of older people do not take their medications at the right time or in the right amount because of complicating factors such as the number of medications prescribed and the number of providers seen for multiple health problems, as well as other physical and cognitive challenges the elderly face.² Lack of knowledge of their illnesses and the role medicines play in their long-term management can lead to intentional medication non-adherence.

What are the consequences of medication non-adherence in older adults?

In older adults, medication non-adherence accounts for 26% of hospital admissions, almost 25% of nursing home admissions and 20% of preventable adverse drug events in community settings.³ Consequences of non-adherence may be more serious, less easily detected, and less easily resolved in the elderly than in younger patients. Decreased effectiveness of treatment with worsening of disease progression may lead to severe disease complications, resulting in ER visits and hospitalizations. Medication non-adherence increases the economic burden of the US health care system, resulting in an estimated 125,000 deaths annually, and costing \$100 billion per year, including approximately \$47 billion for drug-related hospitalizations.³

How do we identify older adults who are at risk for medication non-adherence?

Medication non-adherence is a multifaceted problem, and must be addressed through a multidisciplinary team effort. Physicians, pharmacists, and nurses as well as staff at community-based senior centers can all be enlisted to help identify older adults at risk for medication non-adherence, and to work with their individual needs to help improve adherence.

Major predictors of poor adherence to medications in older adults

- Inadequate follow-up or discharge planning
- Side effects of medication
- Lack of belief in benefit of treatment
- Lack of insight into the illness
- Poor patient-provider relationship
- Complexity of treatment
- Barriers to obtaining care or medications
- Psychological problems, particularly depression
- Cognitive impairment
- Treatment of asymptomatic disease

How do we assess medication adherence?

While the absence of a “gold standard” to assess medication adherence poses challenges to preventing non-adherence and its consequences, there are some valid, reliable, and cost-effective tools available, as shown in the table below. Using these tools in clinical settings may be helpful in improving medication adherence.

Pill Count	This measures adherence by comparing the number of doses remaining in the patient's supply with the number of doses that should be present, if the patient has taken all doses on schedule.
Patient Estimates of Adherence	Direct questioning of patients to assess adherence can be an effective method. Patients who admit to non-adherence are generally accurate in their assessment.
Scaled Questionnaires	<ul style="list-style-type: none"> • Morisky et al.⁴ developed an 8-item scaled questionnaire to assess adherence with antihypertensive treatment. Their scale demonstrated acceptable psychometric properties. See the scale here: http://escholarship.org/uc/item/3m37z2jc#page-23. • The Hill-Bone Compliance to High Blood Pressure Therapy Scale⁵ includes 14 items, 8 of which are directed at assessing medication behavior in hypertensive patients. This method has the added advantage of soliciting information on situational factors

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<ul style="list-style-type: none"> interfering with medication adherence (e.g., forgetfulness, remembering to bring medications along when out of town). Brief Medication Questionnaire (BMQ)⁶ was developed to assess patients at risk for medication non-adherence, and includes the Regimen screen, Belief screen, Recall screen, and Access screen.
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What factors contribute to medication non-adherence and what strategies improve adherence?

Health care system-related factors	Strategies
Provider-patient relationship	<ul style="list-style-type: none"> Establish a positive, supportive, trusting relationship Assess understanding of the illness and treatment Assess readiness to carry out the treatment plan Identify and discuss any barriers to adherence and formulate strategies for overcoming them Tailor medication regimens to the patient's daily routine Reduce complexity of medication regimen & provide appropriate follow-up care Reward adherence and good or improving performance Involve family members for social support
Provider communication	<ul style="list-style-type: none"> Avoid medical jargon Use short words and short sentences Give clear instructions on the exact treatment regimen, preferably in writing
Condition-related factors	Strategies
Therapy for asymptomatic conditions	<ul style="list-style-type: none"> Inform the patient about disease process, importance of treatment or prevention, and consequences if not treated
Therapy-related factors	Strategies
Complexity of medication regimen	<ul style="list-style-type: none"> Reduce dose frequency and use long-acting dosage forms where possible Identify combination medications that can replace two separate prescriptions

	<ul style="list-style-type: none"> Introduce reminder strategies tailored to the individual, such as pill organizers, calendars, phone reminders, etc.
Lack of immediate benefit of therapy	<ul style="list-style-type: none"> Educate the patient about what to expect, including how medication works, time to onset of effect, goals of therapy, and how to monitor for effectiveness
Chronic or long-term therapy	<ul style="list-style-type: none"> Simplify regimen Involve family members Cue medication taking to daily tasks or routine
Actual or perceived unpleasant side effects	<ul style="list-style-type: none"> Educate about what to expect from treatment and risks vs. benefits (e.g., certain side effects may be temporary)
Social & Economic factors	Strategies
Low health literacy; limited English language proficiency	<ul style="list-style-type: none"> Use pictures, diagrams or pictograms to help communicate information
Cost of medication	<ul style="list-style-type: none"> Evaluate medication for cost-effectiveness; use generics; prescribe lower-cost alternatives Prescription Assistance Programs (www.pparx.org) Enroll in Medicare Part D prescription drug plan
Poor social support, elder abuse	<ul style="list-style-type: none"> Involve family member Refer to support group Report to Adult Protective Services where warranted

(Table adapted from World Health Organization. Adherence to Long-therapies: Evidence for Action.¹)

For more information

Visit <http://www.fda.gov/ForConsumers/ConsumerUpdates/ucm164616.htm> for additional information on medication adherence.

1 World Health Organization. Adherence to long-therapies: Evidence for action. Geneva 2003. Available at http://www.who.int/chp/knowledge/publications/adherence_introduction.pdf

2 FDA Consumer Magazine; Pub No. FDA 03-1315C; revised September 2003.

3 Vermeire E, Hearnshaw H, Van Royen P, Denekens J. Patient adherence to treatment: Three decades of research. A comprehensive review. *Journal of Clinical Pharmacy and Therapeutics* 2001; 26(5): 331-342.

4 Morisky DE, Ang A, Krousel-Wood M, Ward HJ. Predictive Validity of a Medication Adherence Measure in an Outpatient Setting. *The Journal of Clinical Hypertension* 2008; 10(5): 348-354.

5 Kim MT, Hill MN, Bone LR, Levine DM. Development and Testing of the Hill-Bone Compliance to High Blood Pressure Therapy Scale. *Progress in Cardiovascular Nursing* 2000; 15(30): 90-96.

6 Svarstada BL, Chewning BA, Sleath BL, Claesson C. The Brief Medication Questionnaire: A Tool for Screening Patient Adherence and Barriers to Adherence. *Patient Education and Counseling* 1999; 37(2): 113-124.

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