Medication Adherence: Patient Barriers, Provider Barriers, & Strategies for Improving Adherence

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Objectives

• Identify the magnitude and the implications of non-adherence to pharmacotherapy.
• Discuss reasons for non-adherence with a focus on low health literacy, perceived lack of communication, and care transitions.
• Discuss strategies to improve adherence to prescribed pharmacotherapy.
Adherence

• WHO (2001):
  – The extent to which a person’s behavior (taking medications, following a diet and/or executing lifestyle changes) corresponds with agreed recommendations from a healthcare provider

http://apps.who.int/medicinedocs/en/d/Js4883e/6.html

Why the concern about non-adherence?

• ½ of the 3.2 billion annual prescriptions in the U.S. are not taken as prescribed.
• Patients with chronic conditions adhere only to 50-60% of medications as prescribed.
• Approximately 125,000 deaths per year in the U.S. are due to medication non-adherence.
• 33-69% of medication-related hospital admissions are due to poor adherence.
• Total cost of non-adherence in the US is estimated at $100-300 billion each year.

Factors That Place Patients at Risk of Non-adherence

- Cost of medication
- Concern over adverse effects
- Complexity of medication regimen
- Taking multiple medications
- “Silent” conditions
- Forgetfulness
- Negative previous experience with drug therapies
- Perceived lack of communication with provider
- Suboptimal provider/patient relationship
- Low level of health literacy (~90 million US adults)
- Transitional care
- Depression/cognitive impairment

Predictors of Non-adherence

- Younger patient age, female sex, lower incomes, and non-Caucasian race (not in all studies)
- Better statin adherence in patients with CVD and multiple risk factors

Benner JS et al., *JAMA* 2002;288:455-461.
Lewey J et al., *Am Heart J* 2013;165:665-673.e1
Predictors of Statin Adherence, Switching, and Discontinuation: USAGE Survey

- Cross-sectional, self-administered Internet-based survey of 10,138 UD adult statin users, September to October 2011
- Adherent nonswitchers, adherent switchers, non-adherent switchers, and discontinuers were compared.
  - 82.5% adhered with prescribed statin
  - 12% former statin users or discontinuers, cited muscle pain as primary reason (60%), followed by cost (16%), then perceived lack of efficacy (13%)
  - Discontinuers: less satisfied with MD’s explanation of chol treatment, more likely to research statins on the Internet, less likely to monitor chol
  - Statin adherers: reasons for switching were muscle side effects (33%) and cost (32%)
  - Those at risk for non-adherence: low income, muscle pain as side effect, taking med for CVD


Adherence to Statins and LDL Goal Attainment

- Cross-sectional study of 67,100 CAD patients at Kaiser Permanente Southern CA, dispensed 2 or more statin prescriptions between 5/2009 and 5/2010
- Medication prescription ratio (MPR) was calculated to estimate adherence (adherence = MPR ≥ 80%)
- 85.8% had LDL-C < 100 mg/dL, 32.4% had LDL-C < 70 mg/dL, 79.8% were adherent to statin med.
- LDL goal attainment was associated with statin adherence, male sex, Asian/Hispanic ethnicity, a higher number of prescriptions, higher Charlson Comorbidity Index, and HTN

Chi MD et al, Am J Manag Care 2014;20:e105-e112.
Provider-Related Factors That May Impact Adherence

- Failure to provide adequate explanations of benefits/adverse effects of medications
- Ineffective communication with the patient
- Prescribing complex drug regimens
- Neglecting to consider cost issues
- Neglecting to communicate among patient’s various providers
- Lack of time, lack of time, lack of time!

Table 3. Self-Reported Reasons for Primary Nonadherence (n = 73)

<table>
<thead>
<tr>
<th>Did not pick up cholesterol medication due to/because…</th>
<th>% Yes (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>General concerns about medication</td>
<td>63.0 (46)</td>
</tr>
<tr>
<td>Decided to try lifestyle modification</td>
<td>63.0 (46)</td>
</tr>
<tr>
<td>Fear of side effects</td>
<td>93.4 (39)</td>
</tr>
<tr>
<td>Did not think medication was needed</td>
<td>38.9 (28)</td>
</tr>
<tr>
<td>Did not believe condition was life threatening</td>
<td>34.7 (25)</td>
</tr>
<tr>
<td>Fear of drug interactions</td>
<td>16.4 (12)</td>
</tr>
<tr>
<td>Already took too many medications and did not want to take any more</td>
<td>16.4 (12)</td>
</tr>
<tr>
<td>Financial hardship</td>
<td>12.3 (9)</td>
</tr>
<tr>
<td>Did not understand why provider prescribed medication</td>
<td>11.0 (8)</td>
</tr>
<tr>
<td>Did not understand purpose of medication</td>
<td>8.2 (6)</td>
</tr>
<tr>
<td>Did not think medication would be effective for condition</td>
<td>6.9 (5)</td>
</tr>
<tr>
<td>Inconvenient dosing regimen</td>
<td>4.1 (3)</td>
</tr>
<tr>
<td>Change in health insurance/drug benefit</td>
<td>2.7 (2)</td>
</tr>
</tbody>
</table>

Harrison TN et al., Am J Managed Care 2013;19:e133-e139.
What is health literacy?

“The degree to which individuals have the capacity to obtain, process and understand basic health information and services needed to make appropriate health decisions.”

Source: Healthy People 2010

Health Literacy

- Questions evaluated by Chew LD et a., 2008:
  - How confident are you filling out forms by yourself?
  - How often do you have someone help you read hospital materials?
  - How often do you have problems learning about your medical condition because of difficulty reading hospital materials?

- By responding to these questions, 32.9% reported inadequate health literacy:
  - 16.9% reported needing help reading medical material
  - 17.1% reported having problems learning about their medical condition
  - 29.6% were not confident completing health forms alone

Harrison TN et al., Am J Managed Care 2013;19:e133-e139.
So what?

- Annual health care costs for those with low literacy skills are 4 X higher than those with higher literacy skills.
- Poor patient compliance and medical errors may be based on poor understanding of health care information.
- Pts with low health literacy and chronic diseases have less knowledge of their disease and treatment and fewer self-management skills than literate patients.
- Pts with low literacy skills were observed to have a 50% increased risk of hospitalization, compared with pts who had adequate literacy skills.

Health Literacy in America: Results from the National Assessment of Adult Literacy (NAAL)

- **Proficient**: Define medical term from complex document, Calculate share of employee’s health insurance costs
- **Intermediate**: Determine healthy weight from BMI chart, Interpret prescription and over-the-counter drug labels
- **Basic**: Understand simple patient education handout
- **Below Basic**: Circle date on appointment slip, Understand simple pamphlet about pre-test instructions
Recognize Red Flags:

“Need-to-knows” for support staff too!

- Seeking help only when illness is advanced
- Making excuses
- Becoming angry/demanding or quiet/passive
- Difficulty explaining concerns or no questions
- Frequently missed appointments, tests
- Non-adherence (may not be able to read/understand a medication bottle)
- “I forgot my glasses” or “I’ll bring this home so I can discuss it with my family.”
- Intake forms incomplete
- Medication review - looking vs reading
- Patients may feel shame which prevents them from seeking help
Burden of Changes in Pill Appearance for Patients Receiving Generic CV Medications after MI

- Generic prescription drugs made by different manufacturers may vary in color or shape.
- Purpose: To determine whether persistent use of generic drugs among post MI patients is associated with inconsistent appearance of their meds.
- Design: Nested case-control study
  - Cases: discontinued their index drug for at least 1 mo.
  - Controls: continued treatment
- Controls and cases were matched on therapeutic class, number of dispensings before nonpersistence, age, and sex.

Burden of Changes in Pill Appearance for Patients Receiving Generic CV Medications after MI

• Results:
  – 29% of patients (3286 of 11,513) had a change in pill shape or color.
  – Statins had the most changes in appearance.
  – Odds of nonpersistence in case patients increased by 34% after a change in pill color and 66% after a change in pill shape.

“The biggest barrier is realizing it is not just about reading and writing about health. It is a social issue. We must assume that everyone has some limited health literacy. An estimated 88% of adults—almost all of us—do not have the health literacy skills to proficiently interact with the healthcare system.”

Andrew Pleasant, PhD,
Assistant Professor at Rutgers University
Director of Health Literacy and Communication
“I never know what he says after I leave his office. It’s like he’s talking Russian. I try to follow what he’s saying, but he talks too fast and uses words that mean nothing to me. I don’t want him to think I’m stupid...I’m not stupid. I may be old and slow, but I’m not stupid.”

L.P.I., 91 years old
College graduate and fluent reader
(personal communication, Feb. 14, 2009)

Adults at each health literacy level, by age

The main problem with communication is the assumption that it has occurred.

George Bernard Shaw

Strategies

• Create a shame-free environment.
• All staff should be made aware of literacy issues.
• Speak slowly to foster a patient-centered approach.
• Use plain, nonmedical language.
• Use supplemental materials with visual images, video, and audio sources to improve recall.
• Limit the amount of information and repeat it.
Strategies

• Use teach-back to confirm patient understanding
• Reinforce education with follow-up phone calls/visits
• Use teach-back with telephone instructions
• Create a collaborative environment to encourage questions
• Enlist the aid of the patient’s family or friends: 2nd pair of eyes and ears who can reinforce & clarify later

Pictures, videos to reinforce information:
helpful for physiologic concepts

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<th>Date</th>
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<th>Name</th>
<th>June 2000</th>
<th>C/2000 42324-967</th>
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<td>Names of PII</td>
<td>What It’s For</td>
<td>Morning/ Breakfast</td>
<td>Afternoon/ Lunch</td>
<td>Evening/ Dinner</td>
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<tr>
<td>Lisinopril</td>
<td>1 pill a day</td>
<td>Blood Pressure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Simvastatin (Zocor)</td>
<td>1 pill a day</td>
<td>Cholesterol</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Metformin</td>
<td>1 pill a day</td>
<td>Blood Sugar</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gabapentin (Neurontin)</td>
<td>2 pills a day</td>
<td>Nerve Pain</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aspirin EC</td>
<td>1 pill a day</td>
<td>Heart Pain</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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Shared Decision-Making

• Follow a patient-centered approach to care that involves the patient in the decision-making process.
• Engage in a clinician–patient discussion before initiating treatment, e.g., statin therapy for primary prevention in patients with lower ASCVD risk.
• The ACC/AHA cholesterol guidelines recommend not only the risk calculation, but also the clinician–patient review of risk and the decision to take a statin.
• The NLA recommendations also focus on a patient-centered approach to lipid management.
• The more empowered patients feel, the more likely they will be motivated to manage their condition and adhere to medications.

Shared Decision-Making

• Age is a major contributor to the ASCVD risk calculation.
• A 65-year-old man and a 71-year-old woman with optimal risk factors have a >7.5% 10-year risk.
• Clinical judgment, statin safety issues, and consideration of patient preferences inform the treatment plan.
• Prescription of a statin is not automatic.
• Treatment plan is a comprehensive approach to risk reduction that begins with the use of the ASCVD risk calculator
  – Addresses all modifiable risk factors
  – Incorporates heart-healthy lifestyle counseling
  – Recommends statins as first-line therapy; discusses potential adverse effects
  – Invites patient to ask questions and express values/preferences

Martin SS et al., JACC 2015;65:1361-1368.
Tell me, I may listen,
Teach me, I may remember,
Involve me, I will do it.

--Chinese proverb

Educating the Patient

• Assess patient’s need for information (verbal explanation, written materials)
• Specifically relate the reason for prescribing a lipid modifying agent to an individual patient’s condition:
  – Recent cardiac event
  – Diabetes as a high-risk condition
  – Presence of CAC
  – High LDL + family history
  – Low HDL + family history
Educating the Patient

• Address the importance of 3 forms of therapy to modify lipids and reduce CHD risk:
  – Heart-healthy diet
  – Regular physical activity
  – Medication

• Stress the “life-saving, event prevention” nature of statins for high-risk patients

Address Potential Adverse Effects

• Patients hear/read about them.
• Discuss the potential for muscle aches and describe how muscle aches feel (statins).
• Inform patients about flushing with niacin and how to avoid it.
• Tell patients you want to be called if they believe they are experiencing an adverse effect.
• Assure patients that you will check safety labs when you check a lipid panel.
• Explain that although statins are one “class” of drugs, they are very different from one another; a problem with one doesn’t usually mean every statin should be avoided.
Assess Adherence During Each Appointment

- “In the past 2 weeks, what percent of your cholesterol medicine would you say you have taken?”
- (If less than 100%)……..”What is the main reason you might miss your medication?”

Family Support; Patient’s Beliefs; Patient/Provider Relationship

- Engage family members (spouses, significant others, children)
  - Explain the importance of treatment adherence.
- Acknowledge patient’s beliefs and preferences.
- Emphasize “partnership” between provider (or clinic team) and the patient.
- Key: provider/patient relationship; establish a collaborative process for problem-solving.
- Patients must know they can ask any question.
- Praise patients for achieving treatment goals.
Involve Nurses, Pharmacists, Other Members of the Healthcare Team

- Telephone follow-up
- Interim appointments
- Monitoring of prescription refills


Reminder Systems; Change Medication to Improve Adherence

- Patient initiated: Phone/watch alarms
- Connect medication-taking to other tasks
- Periodic nurse phone calls
- Forgetting to take statin in evening or at bedtime → switch to long-acting statin

Motivational Interviewing

• Useful for patients who are resistant to treatment regimens (don’t like to take medication, don’t think their condition is severe enough, they are too busy or stressed)

• MI doesn’t rely on information sharing or advice giving; not confrontational, forceful or authoritarian

• Shaped by an understanding of what triggers change


Motivational Interviewing

• Express empathy: “It’s not easy making all of these changes.”

• Roll with resistance: “You don’t want to take the medicine anymore. You feel fine.”

• Elicit-provide-elicit → find out what the patient knows, fill in the gaps, correct misconceptions, explore how this will fit into the patients lifestyle
Motivational Interviewing

• Support autonomy: “Of course it’s your decision. If you elect to try this medication, I assure you that I will monitor any side effects and alter the dose or the medication.

• Explore ambivalence: “Let’s talk about the pros and cons of taking medication for your lipids.”

• Developing a plan of action: “So what’s the next step for you? What do you think you are willing to do for your health right now?”

Case Scenario

• 59-year-old male cardiac transplant patient with vasculopathy referred to NP lipid specialist by cardiologist for LDL of 167 mg/dL

• Presumably, lipid management included simvastatin 80 mg (yikes!) and ezetimibe 10 mg daily

• Patient also had chronic renal insufficiency

• A few months ago, patient was hospitalized for an unrelated problem

• After careful review by NP and pharmacist, the patient last refilled his statin the month prior to hospitalization

• NP reinstituted statin (atorvastatin 10 mg daily)
Conclusion

• Poor medication adherence contributes to sub-optimal clinical benefits and poor clinical outcomes.
• Poor medication adherence has many causes related to the patient, provider, and healthcare system.
• Poor health literacy and inadequate patient/provider/clinic communication are significant causes of medication non-adherence.
• The solution is 1) early recognition of non-adherence, and 2) a sustained, coordinated effort by the entire healthcare team to prevent and address non-adherence.

NLA Resource

• Patient Adherence Toolkit: https://www.lipid.org/practicetools/tools/adherence