

Medication Adherence: Making the Case for Increased Awareness

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Medication adherence defined

Over the past half century, rapid advances have been made in the management of many chronic and acute health problems that require medication therapy, including diabetes, hypertension, high cholesterol, tuberculosis (TB), and human immunodeficiency virus (HIV). When left untreated or undertreated, these conditions often lead to complications (e.g., heart attacks, stroke, kidney failure, immune compromise) that decrease patients' quality of life and increase their risk of death (1). One of the key components in the management of health conditions is the use of prescribed medications. The effectiveness of medications and their long-term benefits depend on adherence to the prescriber's instructions (2). Adherence is defined as the extent to which patients follow the instructions they are given for prescribed treatments (3). Medication non-adherence includes delaying prescription fills, failing to fill prescriptions, cutting dosages, and reducing the frequency of administration.

Problem

Patients frequently do not adhere to essential medications, with substantial consequences to public health (4). Medication non-adherence is an enormous burden to the world's health care system. Half of the 3.2 billion annual prescriptions dispensed in the United States are not taken as prescribed (5). Numerous studies have shown that patients with chronic conditions adhere only to 50-60 percent of medications as prescribed, despite evidence that medication therapy improves life expectancy and quality of life (6-11). Approximately 125,000 deaths per year in the United States are linked to medication non-adherence (12). Between 33 and 69 percent of medication-related hospital admissions in the U.S. are due to poor adherence (5), with total cost estimates for non-adherence ranging from \$100-300 billion each year including costs for additional doctor visits, emergency room visits, hospital admissions, and additional medicines (13-18).

These data confirm what we had believed for some time: that poor adherence leads to considerable morbidity, mortality, and avoidable health care costs (16-21). As an example of the cost-saving benefit of medication adherence, it is estimated that for every additional dollar spent on adhering to a prescribed medication, medical costs would be reduced by \$7.00 for people with diabetes; \$5.10 for people with high cholesterol; and \$3.98 for people with high blood pressure (17). In addition to more obvious costs such as health care expenses, non-adherence may lead to other undesirable outcomes, including patient and physician frustration, misdiagnoses, and in more extreme situations, unnecessary treatment and exacerbation of disease or fatality (22). In fact, failure to

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identify and remediate poor adherence often results in intensified pharmacotherapy with increased doses of medication – thus increasing the overall cost of treatment as well as escalating the risk of adverse effects. Moreover, the rise of performance measures that reward quality based on attainment of treatment targets such as blood pressure reinforces the import of longitudinal medication adherence.

The importance of recognizing and improving medication adherence continues to draw more attention as the cost of medications continues to increase, advances in medication treatment for various diseases continues, and the use of these medications increases as the population ages.

Growing focus on proper medication adherence

The recognition of the importance of medication adherence has been increasing over the last few years. A 2005 World Health Organization (WHO) report states that because the magnitude of medication non-adherence is so alarming, more health benefits worldwide would result from improving adherence to existing treatments than developing any new medical treatments (4). Interventions that stimulate better adherence to essential medications even slightly may meaningfully improve public health. Although the consequences of suboptimal adherence to medications are quite variable, poor adherence clearly poses a threat to the health of the U.S. population (23, 24) that must be addressed to reduce the gap between potential and actual health care quality.

It is important to point out that what seems like a straightforward behavior – taking a pill on a regular schedule – is actually a complex endeavor. Successful pharmacological treatment of any medical condition requires patient adherence in a multiple-step pathway that includes: 1) keeping a scheduled appointment with a provider; 2) accepting a prescription for a medication; 3) filling the prescription at a pharmacy; 4) taking the medication as prescribed; 5) maintaining an adequate supply of the medication by refilling the prescription in a timely manner; and 6) returning to the provider for on-going monitoring (5).

Multi-faceted problem, multi-faceted approach

A multi-faceted problem such as adherence requires a multi-faceted approach. The WHO report mentioned above specifically called for a multi-disciplinary approach to adherence, including support for patients as they attempt to manage their medications, as well as coordinated action from health care professionals, researchers, and policymak-

ers. With this approach, the numerous reasons for poor adherence – ranging from the presence or absence of visible symptoms and side effects, to the complexity of treatment and difficulty of administration, to the cost of the medications – can be addressed.

Medication adherence must be addressed on several levels, including the patient, the provider, and the health care system. Patients need the knowledge, attitude, and skills to follow an appropriately prescribed regimen (25). Similarly, providers need to follow established guidelines in prescribing regimen; ensure that patients understand the reason for the prescribed medications and possible side effects, the interactions with other agents, and the manner in which the medicine is to be taken; and ensure that the recommended regimen is as simple as possible. Finally, the system or organization within which providers work needs to provide resources and set policies that support optimal practices, particularly prevention-oriented activities (26).

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National call to action

In response to the increasing problem of poor medication adherence among Americans and research demonstrating the important roles both patients and health care professionals play in addressing the problem, the National Council on Patient Information and Education (NCPIE) issued a national action plan in 2007. The plan identified 10 priorities, including a call to create a public/private partnership to execute a national public education campaign on medication adherence (27).

In 2008 the National Consumers League (NCL), with its long history of medication safety issues and coalition building, answered this call to action by planning a national education campaign on the importance of taking medication as prescribed. NCL recruited partners from every sector of the health care system to help plan and execute a campaign, including health care professional groups, targeted chronic disease groups, consumer advocates, health insurance plans, pharmacies, family caregivers, pharmaceutical companies, and business organizations, as well as government agencies and researchers (28).

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National Consumers League campaign research

With planning funds from the Agency for Healthcare Research and Quality, the National Consumers League embarked on extensive outreach and research to inform the campaign strategy and approach. In 2009 the National Consumers League conducted focus groups and one-on-one interviews with health care consumers, health care professionals, and family caregivers, to gain perceptions, opinions, beliefs and attitudes about medication adherence. (More information on this research can be found at www.nclnet.org/adherence.) More extensive research was conducted in 2010 and early 2011 around the execution of a specific public awareness campaign on medication adherence. This research explored many barriers to adherence, searching for a common thread of communication that would resonate with many patient types.

This track of research included eight focus groups in October 2010 to find out more about patients' attitudes about medication adherence, their reasons for failing to adhere to medication therapy, and their input on possible campaign messages to promote adherence. Two groups each were held in Birmingham, Ala.; Cincinnati, Ohio; Oklahoma City, Okla.; and Providence, R.I. The researchers found that most patients do not understand their diseases or the consequences of not adhering to a medication regime. They define adherence differently than health care professionals do, and they may not recognize the benefits of their medications. Their reasons for non-adherence include the following:

- Complexity of managing multiple medications
- Unpleasant side effects
- No discernible impact on patient's condition/asymptomatic
- High cost of prescription medications

The research identified opportunities for better communication between primary care physicians and their patients about their conditions and the consequences of not taking their medication as directed. The focus group participants also cited pharmacists as trusted sources of information about their medicine. Based on the findings from the focus groups, as well as additional testing, the campaign researchers recommended direct, factual language to detail the consequences of non-adherence, such as serious health complications and a restricted quality of life. They also recommended an emphasis on the impact of non-adherence on the patient's family and future.

***Script Your Future* campaign**

Based on the research, the National Consumers League and its partners have developed *Script Your Future*, a multi-year public education effort focusing primarily on patients affected by three serious chronic conditions for which taking prescribed medicine as directed is especially important to good health outcomes: diabetes, respiratory disease, and cardiovascular disease. It is the first campaign of its kind to raise awareness among consumers and their family caregivers about the importance of taking medication as prescribed as a vital first step toward better health outcomes. It will also encourage patients and health care professionals to better communicate about ways to improve medication adherence, and will include specific outreach to health care professionals to support them with tools and resources to help patients be more adherent.

The campaign will be an integrated marketing effort at both the national and regional levels, including research and targeted outreach efforts and activities in six pilot cities – Baltimore, Md.; Birmingham, Ala.; Cincinnati, Ohio; Providence, R.I.; Raleigh, N.C.; and Sacramento, Calif. Periodic public opinion research both at the national level and in the selected cities will be conducted as part of the campaign and will inform earned, paid, and social media tactics. In addition, the Campaign Evaluation Working Group will explore ways to measure changes in medication adherence behavior resulting from the campaign and complementary interventions.

To learn more about the campaign, visit www.ScriptYourFuture.org. Resources specific to health care professionals can be found at www.ScriptYourFuture.org/HCP.

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