

FACTS

A Tough Pill to Swallow:

Medication Adherence and Cardiovascular Disease

OVERVIEW

The statistics are startling, but as many as half of 187 million patients in the U.S. do not take their medications as prescribed¹ – meaning they do not follow the intensity of the drug regimen or continue to take their drugs through the duration of the prescription. There are a variety of potential reasons for this, including poor communications between healthcare providers and patients, fear of side effects, high medication costs, interaction with other prescriptions, and simple forgetfulness.¹

Poor medication adherence is particularly common among patients with cardiovascular disease. For example, research suggests that almost one third of patients were nonadherent as early as 90 days after having a heart attack² and 25-30% of patients with high cholesterol failed to pick up their medications within one to two weeks of receiving the prescription from their doctors.³

These individuals do so with serious consequences to their health. Nonadherent patients are more likely than their medication adherent counterparts to have adverse health events that incur additional costs to them and the health care system.⁴

Unfortunately, the problem of medication nonadherence is likely to grow, particularly as the population ages and more individuals are prescribed prescription drugs. Currently, approximately 90% of adults over the age of 65 take prescription drugs, with 65% taking three or more prescription drugs,⁵ and the number of older Americans is expected to double by 2040.⁶

The variety – and potential combination – of barriers that result in medication nonadherence mean no single solution will close the adherence gap. Additional research, education, and awareness on medication adherence can increase our understanding of best practices and interventions that ensure patients take their medicines as prescribed. But policy changes in Medicare, for example, could also help improve

medication adherence for this important patient group. Improving medication adherence, therefore, will require a multifaceted approach.

IMPACT OF MEDICATION NONADHERENCE

The prevalence of medication nonadherence is difficult to assess since no one measure captures the total picture. It is known, however, that when individuals do not take their medications as prescribed, they face greater health risks and worse health outcomes.

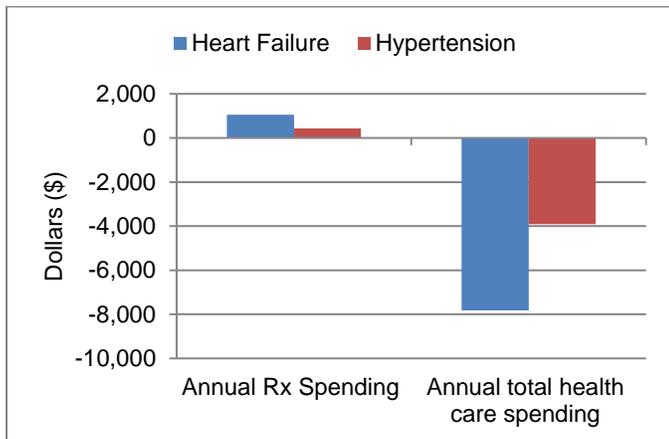
- Medication nonadherence results in approximately 125,000 preventable deaths a year.¹
- 46,000 deaths may be avoided each year if 70% of patients with hypertension got the treatment they need.⁷
- The risk of suffering from myocardial infarction and stroke among nonadherent hypertension patients is more than two times higher compared to hypertension patients who adhere to taking their medicine. Additionally, the risk of hospitalization for coronary heart failure among these patients is almost three times higher compared to their adherent counterparts.⁸
- Patients with acute coronary syndrome who do not adhere to their medications have a 3 times greater likelihood of death compared to patients who adhere to their prescriptions.⁹
- Poor adherence to heart failure drugs is associated with an increased number of cardiovascular-related emergency department visits and inpatient hospital days.⁴

In addition to the health impact, medication nonadherence results in increased health care costs for individuals and a health care system already under stress.

- Up to \$300 billion in avoidable costs is spent annually on medication nonadherence, which represents approximately 10% of all healthcare costs in the U.S.¹⁰
- Health care costs associated with mismanaged multiple medications by seniors was estimated to be \$1.3 billion in 2012. \$1.1 billion of that money was spent on inpatient treatment and the rest on emergency room and outpatient visits.¹¹

- Between 1999 to 2010, 11.4% of stroke survivors – or approximately 543,000 individuals – reported facing higher health care costs as a result of their medication nonadherence.¹²
- Adherence in patients with congestive heart failure and hypertension reduced average annual total health care spending by \$7,823 and \$3,908, respectively per individual.⁴

Impact of Medication Adherence on Health Care Spending Per Person⁴



BARRIERS TO MEDICATION ADHERENCE

There are a number of reasons why a patient may not take medications as prescribed, and often it may be a combination of factors. Some causes of medication nonadherence include:

- Fragmentation across the health care system, which can limit care coordination or make it difficult for physicians to easily access patient information across different care settings.¹³
- The complexity of the drug therapies, which may lead to a patient’s perceived fear of side effects from the medication(s) or general confusion about the regimen.¹
- Poor communication between a provider and a patient about the medications, or difficulty explaining and understanding the benefits and adverse effects of complex drug therapies.¹⁴
- Unintentional patient behavioral factors, such as forgetfulness.¹⁵
- Patients’ physical or cognitive impairments.¹
- Socioeconomic factors, such as low health literacy, and high medication costs, as well as lack of transportation to fill prescriptions at a pharmacy.²

THE ASSOCIATION ADVOCATES

The American Heart Association/American Stroke Association is committed to advocating for innovative approaches to help improve medication adherence. This includes approaches that would:

- Advance research to understand how different medication adherence interventions affect health outcomes and which combinations of approaches are the most successful.
- Advance our understanding of the link between medication adherence, patient healthcare spending and healthcare costs.
- Promote greater awareness among patients and healthcare providers about the importance of medication adherence in order to identify, address, and overcome adherence barriers.
- Establish uniform quality measures of medication adherence.
- Provide incentives for medication adherence through delivery system reform.
- Ensure medication adherence is included as a component of quality improvement activities.
- Help enact the Medication Therapy Management Empowerment Act of 2015 (S. 776), a bill that would expand the number of Medicare beneficiaries eligible for medication therapy management programs.

¹ National Council on Patient Information and Education. Accelerating Progress in Prescription Medicine Adherence: The Adherence Action Agenda. *A National Action Plan to Address America’s “Other Drug Problem.”* October 2013. <http://bemedicinesmart.org>.

² Faridi K, Peterson E, McCoy L, Thomas L, Enriquez J, Wang T. Timing of First Postdischarge Follow-up and Medication Adherence After Acute Myocardial Infarction. *JAMA Cardiology.* 2016;1(2):147. doi:10.1001/jamacardio.2016.0001.

³ Derose S, Green K, Marrett E et al. Automated Outreach to Increase Primary Adherence to Cholesterol-Lowering Medications. *JAMA Internal Medicine.* 2013;173(1):38-43. doi:10.1001/2013.jamainternmed.717.

⁴ Roebuck M, Liberman J, Gemmill-Toyama M, Brennan T. Medication Adherence Leads To Lower Health Care Use And Costs Despite Increased Drug Spending. *Health Affairs.* 2011;30(1):91-99. doi:10.1377/hlthaff.2009.1087.

⁵ National Center for Health Statistics. Health, United States, 2015: With Special Feature on Racial And Ethnic Health Disparities. Hyattsville, MD; 2016:272.

⁶ Administration on Aging. Aging Statistics. http://aoa.gov/Aging_Statistics/. Access November 8, 2013.

⁷ American Heart Association. American Heart Association Supports Bipartisan Medication Therapy Management Bill. <http://newsroom.heart.org/news/american-heart-association-supports-bipartisan-medication-therapy-management-bill>. Accessed November 11, 2013.

⁸ Böhm M, Schumacher H, Laufs U, et al. Effects of nonpersistence with medication on outcomes in high-risk patients with cardiovascular disease. *The American Heart Journal.* 2013;166(2):306-314. doi:10.1016/j.ahj.2013.04.016.

⁹ Allonen J, Nieminen M, Lokki M et al. Mortality Rate Increases Steeply With Nonadherence to Statin Therapy in Patients With Acute Coronary Syndrome. *Clin Cardiol.* 2012;35(11):E22-E27. doi:10.1002/clc.22056.

¹⁰ Iuga AO, McGuire MJ. Adherence and health care costs. *Risk Management and Healthcare Policy.* 2014;7:35-44. doi:10.2147/RMHP.S19801.

¹¹ IMS Institute for Healthcare Informatics. Avoidable costs in U.S. healthcare: the \$200 billion opportunity from using medicines more responsibly. June 2013.

¹² Levine DA, Morgenstern LB, Langa KM, Piette JD, Rogers MA, Karve SJ. Recent trends in cost-related medication nonadherence among stroke survivors in the United States. *Annals of Neurology.* February 2013; 73(2): 180-188.

¹³ Gordon, K, Smith, F, and Dhillon, S. Effective chronic disease management: patients’ perspectives on medication-related problems. *Patient Educ Couns.* 2007; 65: 407–415

¹⁴ Brown, MT, Bussell, JK. Medication Adherence: WHO Cares? *Mayo Clinic Proceedings.* April 2011; 86(4): 304-314.

¹⁵ Griva K, Davenport A, Harrison M, Newman S. Non-adherence to Immunosuppressive Medications in Kidney Transplantation: Intent Vs. Forgetfulness and Clinical Markers of Medication Intake. *Annals of Behavioral Medicine.* 2012;44(1):85-93. doi:10.1007/s12160-012-9359-4.