

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 prescribed² – 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.²

Poor medication adherence is particularly common among patients with cardiovascular disease. For example, research suggests that 24% of patients who suffer a heart attack do not fill their medications within seven days of discharge³, and 34% of heart attack patients with multiple prescriptions stop taking at least one of them within one month of discharge.⁴

And they 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.¹

Unfortunately, the problem of medication nonadherence is likely to grow, particularly as the population ages and more individuals are prescribed prescription drugs. Currently, over three fourths of adults over the age of 65 take two or more prescription drugs, and the number of older Americans is expected to double by 2030.^{6,7}

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.

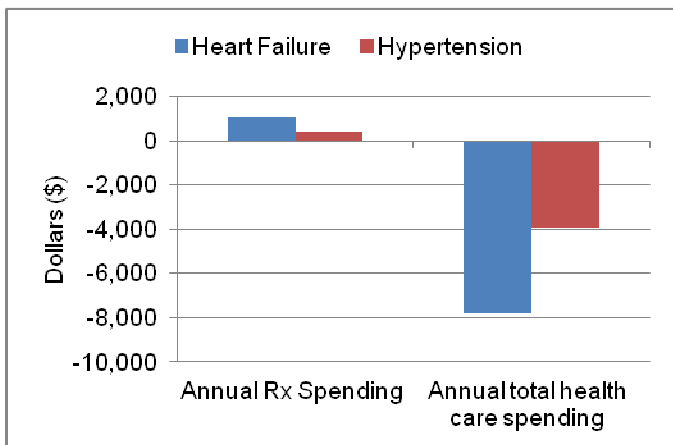
- Medication nonadherence results in approximately 125,000 preventable deaths a year.²
- 46,000 deaths may be avoided each year if 70% of patients with hypertension got the treatment they need.⁸
- The risk of hospitalization, re-hospitalization, and premature death among nonadherent hypertension patients is more than 5 times higher compared to hypertension patients who adhere to taking their medicine.⁹
- Patients with high cholesterol who do not adhere to their medications have a 26% greater likelihood of a cardiovascular-related hospitalization compared to patients who adhere to their prescriptions.¹⁰
- Poor adherence to heart failure drugs is associated with an increased number of cardiovascular-related emergency department visits.¹

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

- \$290 billion in avoidable costs is spent annually on medication nonadherence, of which \$100 billion is spent on hospitalizations alone.¹¹
- 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.¹²
- 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.¹³
- 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.¹⁴

Impact of Medication Adherence on Health Care Spending Per Person¹⁴



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.
- 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.
- 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.¹⁵
- Unintentional patient behavioral factors, such as forgetfulness.
- Patients’ physical or cognitive impairments.
- Socioeconomic factors, such as low health literacy, and high medication costs, as well as lack of transportation to fill their prescriptions at a pharmacy.¹

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 health care spending and health care 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 2013 (H.R. 1024/S. 557), a bill that would expand the number of Medicare beneficiaries eligible for medication therapy management programs.

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³ Jackevicius CA, Li P, Tu JV. Prevalence, predictors, and outcomes of primary nonadherence after acute myocardial infarction. *Circulation*. 2008; 117: 1028-1036.
⁴ Ho PM, Spertus JA, Masoudi FA, Reid KJ, Peterson ED, Magid DJ, Krumholz HM, Rumsfeld JS. Impact of medication therapy discontinuation on mortality after myocardial infarction. *Arch Intern Med*. 2006; 166: 1842-1847.
⁵ Newby LK, LaPointe NMA, Chen AY, Kramer JM, Hammill BG, DeLong ER, Muhlbaier LH, Califf RM. Long-term adherence to evidence-based secondary prevention therapies in coronary artery disease. *Circulation*. 2006; 113: 203-212.
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⁷ Administration on Aging. Aging Statistics. http://aoa.gov/Aging_Statistics/. Accessed November 8, 2013.
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⁹ Gwady-Sridhar, F H., Manias, E, Zhang, Y, Roy, A, Yu-Isenberg, K, Hughes, DA, Nichol, MB... A framework for planning and critiquing medication compliance and persistence using prospective study designs. *Clinical Therapeutics* 31 (2009): 421-435.
¹⁰ Pittman, DG, Chen, W, Bowlin, SJ, Foody, JM. Adherence to statins, subsequent healthcare costs, and cardiovascular hospitalizations. *Am J of Card* 107 (2011): 1662-1666.
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¹³ 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.
¹⁴ Roebuck CM, Liberman JN, Gemmill-Toyama M, Brennan TA. Medication Adherence Leads To Lower Health Care Use and Costs Despite Increased Drug Spending. *Health Affairs*. 2011; 30(1): 91-99.
¹⁵ Brown, MT, Bussell, JK. Medication Adherence: WHO Cares? *Mayo Clinic Proceedings*. April 2011; 86(4): 304-314.