

## Poor Medicine Adherence: The Nation’s “Other Drug Problem”

In 2007, the National Council on Patient Information and Education (NCPIE) defined poor medication adherence at the nation’s “other drug problem” because of the association between nonadherence and disease progression, disease complications, reduced functional abilities, and preventable deaths. Six years later, a new NCPIE report – *Accelerating Progress in Prescription Medicine Adherence: The Adherence Action Agenda* – finds that nonadherence in the U.S. continues to be at unacceptable levels and will only be compounded in the days ahead by an aging society and the looming epidemic of age-related chronic diseases. The following summarizes the report’s key findings on the state of medicine adherence today and why America needs a new *Adherence Action Agenda* to reduce the adverse health and economic consequences of this pervasive public health challenge.

### The State of Patient Adherence Today

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Although the challenge of poor medication adherence has been discussed and debated for decades, half of the 3.2 billion prescription medicines dispensed each year in the U.S. are not taken as prescribed<sup>1</sup> and the impact in morbidity and mortality is extensive. The following underscores the extent of the problem today:

- Up to 93.5 million Americans who take one or more prescription medicines do not take these drugs as prescribed.<sup>2,3</sup>
- Studies show that 20% to 30% of prescriptions are never filled by patients while 50% - 60% of medications to treat chronic disease are not taken as prescribed.<sup>4,5</sup>
- Depending on their conditions and the complexity of the regimens required, as many as 40% of patients fail to adhere to treatment recommendations and this number can be as high as 70% when the treatment regimen is very complex or requires significant lifestyle changes.
- Because lack of medication adherence is associated with poorer health outcomes, poor adherence is linked to approximately 125,000 deaths a year<sup>6</sup> and many as 40% of nursing home admissions in people with type 2 diabetes.<sup>7</sup>
- Examining the impact of poor medicine adherence on patients with specific chronic conditions, new research finds that poor clinical outcomes – including hospitalization, re-hospitalization, and premature death – among nonadherent patients are 5.4 times as high among those with hypertension, 2.8 times as high among those with dyslipidemia, and 1.5 times as high among those with heart disease.<sup>8</sup> These findings are confirmed by estimates that patients who do not adhere to their high cholesterol medications have a 26% greater likelihood of a cardiovascular-related hospitalization, as compared to patients who adhere to their drug regimens.<sup>9</sup>

### The High Cost of Poor Medicine Adherence

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A growing body of research documents the high cost of poor medicine adherence to the nation’s health care system. Some of the key findings are as follows:

- Nonadherence, along with suboptimal prescribing, drug administration, and diagnosis, is associated with \$290 billion per year in avoidable medical spending or 13 percent of total annual expenditures on health care.<sup>10</sup>
- It is also estimated that \$105 billion is wasted annually on medication therapy nonadherence of which 69% – or \$72.5 billion – is spent on hospitalizations.<sup>11</sup>
- Conversely, extensive data exists demonstrating the cost effectiveness of medicine adherence in reducing health care spending. Among the findings is a 2011 study showing that every dollar spent on adhering to medications reduced the costs for patients with congestive heart failure by \$7,823 and saved \$3,756 for each adherent diabetes patient. The study also reported savings of \$3,908 for those properly taking their medicines for hypertension and \$1,258 for each adherent patient with dyslipidemia.<sup>12</sup>
- Building on this new evidence, a 2012 Congressional Budget Office (CBO) applied its legislative scoring methodology to estimate the medical offsets related to improved medication use and reported a one-fifth of a percent reduction in Medicare’s medical service spending for every one percent increase in the number of prescriptions filled through Medicare Part D.<sup>13</sup>

## Why Don’t Patients Adhere?

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The reasons behind the nation’s epidemic of poor medicine adherence are anything but simple. Numerous behavioral, social, economic, medical and policy-related issues contribute to this pervasive and costly problem. Among the many factors impeding medicine adherence today, NCPiE’s new report points to the following:

- **Medication-Related Factors** – Poor adherence is directly related to the number of medications a patient is prescribed as well as the number of daily doses. Studies comparing adherence rates among patients on once-daily and twice-daily regimens found 1% to 44% more adherent days among those taking one pill a day.<sup>14</sup>
- **Patient-Related Factors** – Nonadherence has been found to be more than 1.5 times higher among patients who do not perceive their disease to be severe or a threat.<sup>15</sup> Another significant challenge among patients with multiple chronic conditions is the need to pick up prescriptions at different times and sometimes at different pharmacies, requiring numerous trips to the pharmacy. Moreover, several studies show the costs of some medications and high out-of-pocket costs in the form of copayments or coinsurance impede adherence. A 2011 study of cancer patients taking oral oncology therapy found that abandonment of treatment rose more than four-fold when out-of-pocket costs exceeded \$500, compared to out-of-pocket costs of \$100 or less.<sup>16</sup>
- **Prescriber-Related Factors** – The reality is that few physicians are actively involved in promoting medication adherence. Research indicates the average patient, if allowed to speak freely, would initially discuss disease management with his or her physician for less than two minutes.<sup>17</sup> Yet, most physicians allocate between 7.6 and 17.6 minutes for a primary medical consultation with a patient<sup>18</sup> and spend only 49 seconds discussing all aspects of a newly prescribed medication.<sup>19</sup>
- **Pharmacy-Related Factors** – Research demonstrates an important role for pharmacists in counseling patients on medicine adherence through such programs as Medication Therapy Management (MTM). Although a recent study associated pharmacist-initiated MTM services with \$7.1 million in savings due to the improved health outcomes of the 24,000 patients studied<sup>20</sup> and Medicare allows eligible beneficiaries enrolled in the Medicare Part D prescription drug program free MTM services through their drug plan, the number of Part D participants benefiting from MTM remains low. The report also finds that a number of pharmacy-related barriers continue to impede greater use of pharmacist-led MTM and adherence interventions, including compensation, lack of additional staffing, and poor access to patients’ medical information.
- **Factors Affecting Transitions of Care From the Hospital to the Out-Patient Setting** – A new concern involves the period of transition from hospital to home when patients are instructed to discontinue some

medicines, switch to a new dosage schedule for certain drugs, or begin taking new medications. Due to poor communication between the hospital team and the patient's outpatient healthcare providers about changes in the medication regimen at the time of discharge, studies estimate that about half of adults who were hospitalized experience a medical error after discharge<sup>21</sup> and 19%-23% suffer an adverse event, most commonly an adverse drug event ADE.<sup>22,23</sup>

<sup>1</sup> Osterberg L, Blaschke T. Adherence to medication. *N Engl J Med.* 2005 Aug 4;353(5):487-97

<sup>2</sup> Kaiser Family Foundation. Prescription Drug Trends, May 2010.

<sup>3</sup> Osterberg L, Blaschke T. Adherence to medication. *N Engl J Med.* 2005 Aug 4;353(5):487-97

<sup>4</sup> Peterson AM, Takiya L, Finley R. Meta-analysis of trials of interventions to improve medication adherence. *Am J Health Syst Pharm.* 2003; 60: 657-65

<sup>5</sup> Haynes RB, Ackloo E, Sahota N, McDonald HP. Interventions for enhancing medication adherence. *Cochrane Database Syst Rev.* 2008:CD000011

<sup>6</sup> McCarthy R. The price you pay for the drug not taken. *Business Health* 1998; 16: 27-33

<sup>7</sup> Lau DT, Nau DP. Oral antihyperglycemic medication nonadherence and subsequent hospitalization among individuals with type 2 diabetes. *Diabetes Care.* 2004; 27(9): 2149-2153

<sup>8</sup> 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

<sup>9</sup> 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

<sup>10</sup> New England Healthcare Institute Research Brief: Thinking outside the pillbox: a system-wide approach to improving patient medication adherence for chronic disease. August 2009. [www.nehi.net](http://www.nehi.net)

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

<sup>12</sup> Roebuck, MC, 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: 91-99.

<sup>13</sup> Congressional Budget Office. Offsetting effects if prescription drug use on Medicare's spending for medical services. November 2012.

<sup>14</sup> Saini SD, Schoenfeld P, Kaulback K, Dubinsky MC. Effect of medication dosing frequency on adherence in chronic diseases. *Effect of medication dosing frequency on adherence in chronic diseases*

<sup>15</sup> Di Matteo MR, Haskard KB, Williams, SL. Health beliefs, disease severity, and patient adherence: a meta-analysis. *Med Care.* 2007; 45: 521-528

<sup>16</sup> Streeter, SB, Schwartzberg, L, Husain, N, Johnsrud, M. Patient and plan characteristics affecting abandonment of oral oncolytic prescriptions. *Jour of Onc Practice* 7 2011; 48s-51s.

<sup>17</sup> American College of Preventive Medicine. Medication adherence time tool: improving health outcomes

<sup>18</sup> Lussier, MT, Claude, R. Time to talk. *Canadian Family Physician* 52:11, 2006: 1401-1401

<sup>19</sup> Tarn, DM, et al. How much time does it take to prescribe a new medication? *Patient Educ Counsel* 2008; 72:311-319

<sup>20</sup> Barnett, MJ, Frank, J, Wehring, H, et al. Analysis of pharmacist-provided medication therapy management (mtm) services in community pharmacies over 7 years. *Jour of Manag Care Pharm.* 2009; 15(1); 18-31

<sup>21</sup> Barnett, MJ, Frank, J, Wehring, H, et al. Analysis of pharmacist-provided medication therapy management (mtm) services in community pharmacies over 7 years. *Jour of Manag Care Pharm.* 2009; 15(1); 18-31

<sup>22</sup> Forster AJ, Clark HD, Menard A, et al. Adverse events among medical patients after discharge from hospital. *CMAJ.* 2004; 170:345-349.

<sup>23</sup> Forster AJ, Murff HJ, Peterson JF, Gandhi TK, Bates DW. Adverse drug events occurring following hospital discharge *Gen Intern Med.* 2005; 20:317-323.