

# Why Adherence Matters

This white paper provides an overview of medication nonadherence—from the burden it imposes on the U.S. healthcare system, to its impact on pharmacy payers across various channels, from the challenges and opportunities it creates for pharmacy, to the individual patient-level impact of medication nonadherence. By understanding the toll of nonadherence from multiple vantage points, its relevance across the healthcare continuum becomes clear.

- 1 Burden on the Healthcare System**
- 2 Impact on Payer Community**
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- 4 Individual Patient-Level Impact**

# Burden on the Healthcare System

## **The population is aging.**

In the U.S., 11,000 people reach the age of 65 every day; 20% of the U.S. population will be 65 or older by 2030, and by 2050, this population will be twice the size it was in 2010. Multiple illnesses impact the vast majority of this age group, illustrated by compelling statistics; they have a 100 times greater likelihood of having a hospital admission and account for nearly 90% of all prescriptions filled. However, chronic disease spans far beyond the Medicare population. In

fact, over 80% of Americans aged 50 or older suffer from chronic disease, and this burden is increasing.<sup>1</sup>

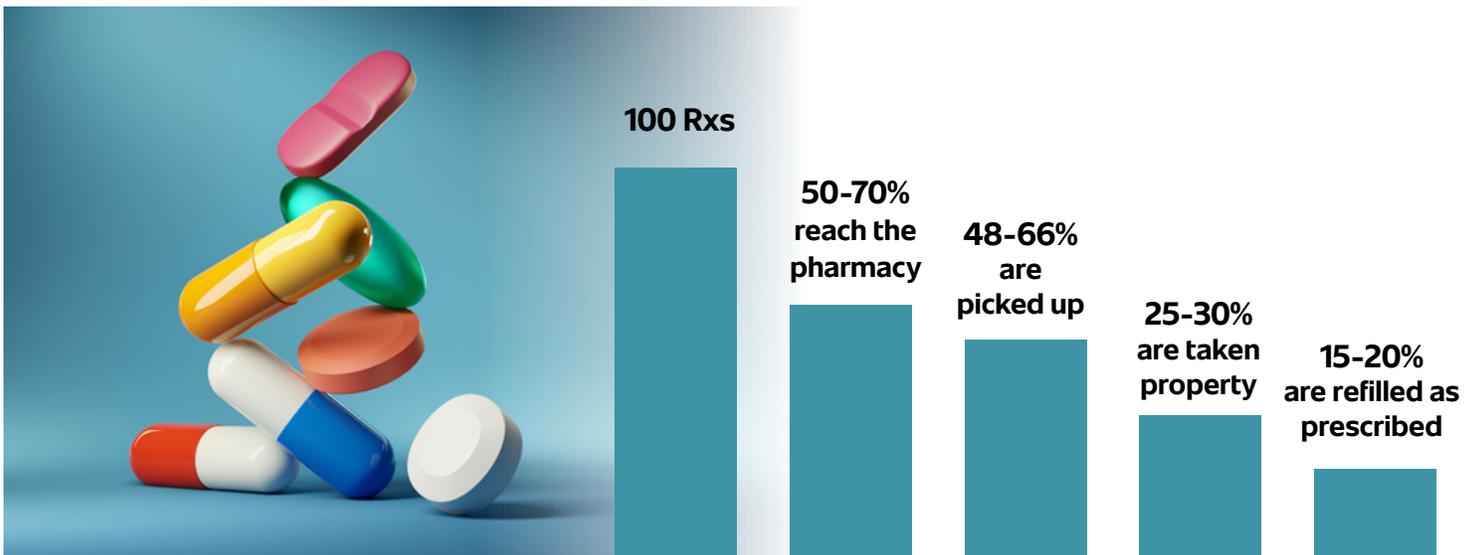
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## **People don't take their medication as prescribed.**

Irrespective of diagnoses, patients do not take their medications as prescribed, increases the risk of preventable disease progression, development of other comorbid conditions, and avoidable emergency room visits. Out of 100 prescriptions written, 50%-70% goes to the pharmacy, 49%-66% come out of the pharmacy, 25%-30% are taken properly, and 15%-20% are refilled as prescribed.<sup>2</sup>





### Financial impact.

Medication nonadherence is a systemic problem. The estimated cost of medication nonadherence alone exceeds \$290 billion and accounts for more than 10% of total national healthcare spending. This figure, while staggering, does not account for all costs of other problems related to appropriateness, effectiveness, and safety of medications.<sup>3</sup>

In 2012, the Congressional Budget Office (CBO), for the first time in history, recognized a direct link between medication adherence and overall medical costs. The CBO concluded that a 1% increase in prescription medication filled correlates a 0.2% reduction in medical services spending.<sup>4</sup>

A study conducted by Harvard researchers and published by Health Affairs in January 2018 linked adherence

improvement achieved through Medication Synchronization from EnlivenHealth™ to an overall reduction of 9% in hospitalizations and emergency department visits.<sup>5</sup>

According to estimates by the IMS Institute, better medication management could produce \$213 billion in savings annually, of which \$105 billion would be from improved adherence.<sup>6</sup>

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# Impact on the payer community: health plans and health systems

## Escalating costs are shifting healthcare from traditional fee-for-service to value-based or fee-for-outcomes-based care.

Health plan and hospital/health system profitability is becoming increasingly linked to quality measure performance and cost-reduction. Regardless of payer/payment channel, performance pressures exist:

### Medicare Plans

The Medicare system serves beneficiaries 65 years of age and older. Since 2006, the requirement by federal law of health plans to offer Medication Therapy Management (MTM) as a component of the Part D prescription medication benefit has expanded the traditional scope of community pharmacy services. The Affordable Care Act of 2010 (ACA) further expanded MTM, the goal of which is to prevent and resolve medication-related

problems and achieve desired clinical benefits from medications.<sup>7</sup> Once any medication-related problems are addressed, the pharmacist's focus is on assisting the patient with adherence to the proper regimen. Standalone prescription drug plans (PDPs) and Medicare Advantage Plans with Prescription Drug benefits (MA-PDs) have a significant stake in the ability of pharmacies to improve their performance on three triple-weighted Star Ratings measures related to medication adherence ineligibility beneficiaries who are diagnosed with diabetes, hypertension, or hyperlipidemia, respectively. Pharmacies play a significant role in the health plan's ability to earn quality bonus payments or, conversely, to be penalized.

### Medicaid and Commercial Plans

Healthcare Effectiveness Data and Information Set (HEDIS) measures

are very important for health plans in that large employers use HEDIS performance to guide their purchasing as they impact the commercial and Medicaid segments of a health plan's business. Administered by the National Committee for Quality Assurance (NCQA), a plan's HEDIS performance places the plan in one of four categories: Excellent, Commendable, Acceptable, and Denied.<sup>8</sup> A significant portion of the HEDIS measures are rooted in medication adherence.

The Medicaid system was established in 1965 as a safety net for our nation's most vulnerable citizens who cannot afford to pay for their own healthcare. Medicaid covers nearly 60 million Americans at an annual cost of over \$400 billion and underwent the single largest expansion in its history as a result of the Patient Protection and Affordable Care Act (PPACA).<sup>9</sup>

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## Examples of the importance of adherence to Medicaid plans include:

- In Medicare and Medicaid beneficiaries with heart failure, total healthcare costs were directly related to adherence; nonadherent patients cost as much as 23% more per year than adherent patients.<sup>10</sup>
- Approximately 50% of schizophrenia relapses are related to medication nonadherence, with each episode estimated to cost between \$10,000 and \$26,000.<sup>11</sup>

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Effective February 2018, 13 states cover MTM services within their Medicaid programs as a method of improving quality and reducing the cost of care. Examples of services for which pharmacists can receive compensation include:

- Documentation of Care Delivered
- Communication of Care Delivered
- Telepractice Services
- Health Status Assessment
- Information Service
- Comprehensive Medication Review (CMR)
- MTM Service integration
- Verbal Education and Training
- Safety and Effectiveness Monitoring
- Coordination of Care
- Medication Action Plan
- Care Plans
- Personal Medication Record
- Referrals to Other Providers
- Support Services to Enhance Adherence

## Hospitals/Health Systems

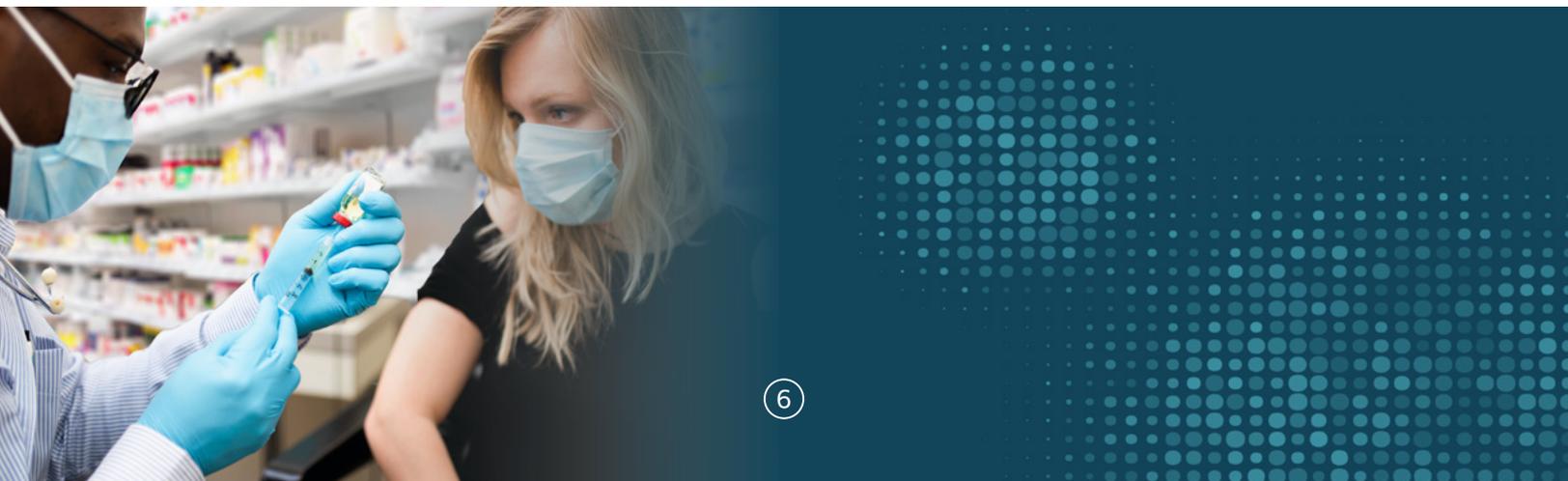
Studies show that 26% of readmissions are potentially preventable and medication-related, the most common of which was nonadherence due to patient choice (23.8%).<sup>12</sup> Additionally, patients with combined low and intermediate adherence have readmission rates of 20% compared to a readmission rate of 9.3% for patients with high adherence. In predicting 30-day readmissions, patients with low and intermedi-

ate medication adherence have over two and a half times greater odds of readmission compared to patients with high adherence.<sup>13</sup>

The Hospital Readmission Reduction Program was instituted in an effort to decrease costs associated with preventable hospital readmissions as part of the Affordable Care Act; 20% of all Medicare beneficiary hospitalizations result in readmission to the hospital within 30 days, and 60% of all medication errors occur during the transition from one

healthcare setting to another, such as being discharged from a hospital or admitted to a long-term care facility.<sup>14</sup> Additionally, 72% of all adverse events that occur following discharge are medication-related.<sup>15</sup>

Roughly 75% of hospitals subject to the Readmissions Reduction Program are being penalized. That means that they will receive lower reimbursement for every Medicare patient stay, not just for those patients who are readmitted.<sup>16</sup>



# Pharmacy Opportunities And Challenges

## Pharmacists are essential to improving healthcare.

Irrespective of payer channel, the pharmacist is well-trained to resolve medication therapy problems that result from duplication, polypharmacy, interactions, and unnecessary medications, as well as nonadherence.

In 2011, NEHI, a national health policy institute that fosters innovation to improve healthcare quality and lower costs, concluded upon reviewing seven leading strategies to advance these objectives that “if we could do just one thing to improve health outcomes and lower cost, the greatest single opportunity

before us would be to help people take their medications correctly.”<sup>17</sup>

Cost of chronic care consumes nearly the entire Medicare budget, accounting for 80% of total costs in Medicaid and 73% in commercial/private sector health plans. Based on their knowledge and expertise, pharmacists are uniquely well-suited to address patient care needs associated with chronic disease management, ensuring appropriateness, effectiveness, safety, and adherence as they relate to the medication regimen.

To a large degree, payer quality measure performance is contingent upon performance of pharmacies

within their networks. Payment for performance, in turn, affords pharmacies new service-based revenue.

While the pharmacist’s knowledge and skill is well-aligned to capitalize on opportunities with health plans, the ability to provide such services in the community pharmacy is limited by many factors, not the least of which is time. Traditionally, filling prescriptions is the primary activity of most pharmacies. In order to build capacity for service-related activities, pharmacists need time and workflow integration, which means pharmacies must have new technology and automation.



# Individual Patient-Level Impact

At a patient level, the consequences of nonadherence are numerous, e.g. waste of medication, substantial worsening of disease, reduced functional abilities, a lower quality of life, and increased use of medical resources such as nursing homes, hospital visits, and hospital admissions.<sup>18,19</sup> Studies show

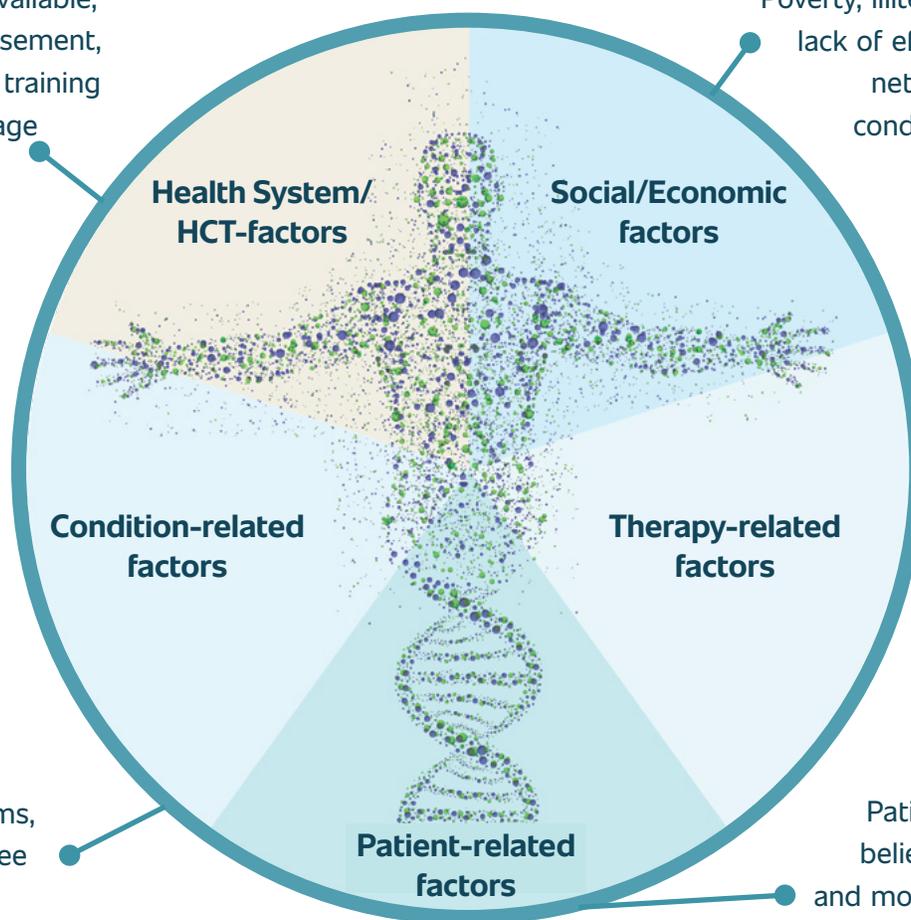
the risk of hospitalization more than doubles in patients with diabetes mellitus, hypercholesterolemia, hypertension, or congestive heart failure who are nonadherent to prescribed therapies compared with a general population.<sup>20</sup>

Identifying specific barriers for each patient and adopting suitable techniques to overcome them will be necessary to improve medication adherence. Pharmacists play a significant role in their daily practice to improve patient medication adherence, the root causes of which are defined by the World Health Organization in the five domains depicted below.

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Health services unavailable, inadequate reimbursement, healthcare provider training inadequate to manage chronic diseases

Poverty, illiteracy, unemployment, lack of effective social support networks, unstable living conditions, transportation, cost of medication



**Health System/  
HCT-factors**

**Social/Economic  
factors**

**Condition-related  
factors**

**Therapy-related  
factors**

**Patient-related  
factors**

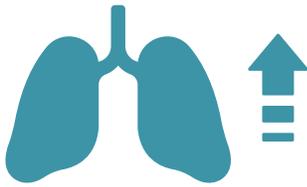
Severity of symptoms, comorbidities, degree of disability

Medication regimen, duration of treatment, previous treatment failures

Patients' knowledge and beliefs about their illness and motivation to manage it



**Condition-specific data underscores the importance of adherence from the patient perspective:**



**Asthma.** Medication adherence in high-risk people who suffer from asthma has been shown to result in reduced overall healthcare costs due to fewer hospitalizations and emergency department visits.<sup>23</sup>

**Behavioral Health.** Mental health conditions are frequently associated with highly complex medication needs, with appropriate prescribing and medication adherence essential to patient well-being.<sup>24</sup>

**COPD.** Studies conducted among COPD patients have shown that poor adherence to drug therapy and disease management leads to emergency hospitalization.<sup>21, 22</sup> Conversely, Toy et al. demonstrated that

high proportion of days covered (PDC) scores are correlated with fewer emergency department visits and hospitalizations, resulting in a 2.2% reduction in overall costs.<sup>25</sup> A similar study found an annual reduction in Medicare spending of \$2,200 among patients with high PDC scores, compared to patients with PDC scores below 80%.<sup>26</sup> Stuart et al. compared users and nonusers of maintenance medication for COPD and found that use of maintenance therapy was associated with significantly lower risks of hospitalization and/or re-hospitalization and, thus, reduced Medicare expenditures.<sup>27</sup>



**Depression.** Retrospective analysis of a large national managed care database showed that, of patients initiated on selective serotonin reuptake inhibitor (SSRI) therapy for

depression and/ or anxiety, 43% of patients were adherent to antidepressant therapy, and adherent patients were associated with the lowest yearly medical costs.<sup>28</sup>



**Diabetes.** Medication adherence has been associated with lower overall healthcare costs for diabetes, hypercholesterolemia, and hypertension.<sup>30</sup> Two systematic reviews showed evidence that medication nonadherence in diabetes was associated with higher costs.<sup>31, 32</sup> Balkrishan et al. found that each 10% increase in adherence was associated with an 8.6% to 28.9% decrease in total annual healthcare costs.<sup>33</sup> More recently, in a longitudinal four-year study of 740,195 veterans with type II diabetes, Egede found that nonadherent patients can have annual inpatient costs 41% higher compared

to adherent patients, and concluded that significant costs could be avoided by increasing adherence.<sup>34</sup>



**Hyperlipidemia.** Several studies have found strong associations between statin adherence and costs. In a retrospective cohort study, higher adherence rates were associated with reductions in subsequent total healthcare costs and cardiovascular

disease-related hospitalizations.<sup>35</sup>

**Hypertension.** High blood pressure is a leading comorbid cause of heart disease, stroke, congestive heart failure, and kidney disease. Retrospective longitudinal analyses by Sun et al. revealed that adherence and persistence with angiotensin receptor blockers and angiotensin converting enzyme inhibitors resulted in lower risk of rehospitalization and lower healthcare costs.<sup>36</sup>

**Polypharmacy.** Polypharmacy is the use of multiple drugs or more



drugs than are medically necessary. Patients taking five or more medications have an 88% higher risk of experiencing an adverse drug event than those taking fewer medications.<sup>37</sup> The burden of taking multiple medications also places patients at greater risks of drug interactions, duplicate therapy, functional decline, cognitive impairment, falls, urinary incontinence, and malnourishment.<sup>38</sup>

In summary, the impact of medication nonadherence is far reaching from the individual patient to pharmacists/pharmacies, payers, and the healthcare system as a whole. Pharmacy is the linchpin for adherence improve-

ment. Whether at the patient, payer, or healthcare system level, pharmacies are uniquely suited to resolve the problem of nonadherence. However, they need greater efficiency and actionable data through improved tech-

nology and automation to get there. EnlivenHealth™ has a comprehensive medication management platform with a number of innovative solutions to support pharmacies in their quest to solve medication nonadherence.



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## About EnlivenHealth™

EnlivenHealth provides the most proven and advanced technology solutions for intelligent patient engagement and communications. Trusted by a national network of leading pharmacies, the EnlivenHealth™ Patient Engagement Platform empowers pharmacies and health plans to significantly improve medication management, adherence, and safety for their patient populations. Our mission is to help you ensure lifelong optimal health for your patients and members, measurably improve quality scores, and strengthen business results. EnlivenHealth™ is a division of Omnicell, Inc. (NASDAQ: OMCL), a leading provider of medication management solutions and adherence tools for healthcare systems and pharmacies