

The Need for Adherence Pharmacy

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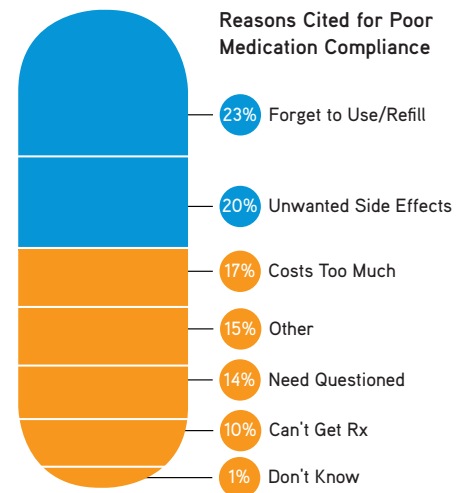
INTRODUCTION Historically, care provided within the American healthcare system has been extremely siloed and has failed to support a coordinated patient-centered delivery system. Patients are cared for by different healthcare providers — each focusing on a narrow piece of the patient’s medical condition and with little thought to the overall patient. As life expectancies extend and the U.S. lifestyle becomes increasingly unhealthy, the probability of short- and long-term health conditions impacting peoples’ lives is becoming greater. The rise in the number of people with chronic diseases is contributing to an increase in the number of medications prescribed and consumed, as well as an increase in healthcare spending.¹

Medications used appropriately can alleviate symptoms that compromise a patient’s well-being, help prevent the onset of illnesses, and improve health outcomes. Unfortunately, medications are frequently not taken as prescribed.²⁻⁴ Medication non-adherence is defined simply as the number of doses not taken as prescribed by a healthcare provider. Primary non-adherence occurs when patients do not fill a prescription or fail to pick it up from the pharmacy. Secondary non-adherence occurs when prescriptions are filled and picked up, but the medication is not taken as directed.

Medication non-adherence is currently a \$290 billion per year problem in the US,⁵⁻⁶ with an average of only 50-60% of patients taking medications as prescribed.⁷ It is estimated that more than 1.5 million preventable medication-related adverse events occur each year, accounting for over \$177 billion in medication-related morbidity and mortality costs.⁸⁻⁹ Medication-related problems impact the patient’s perspective, frame of mind, or belief regarding medications, which in turn can lead to poor adherence. Along with increased costs, non-adherence translates into poor medical outcomes, higher hospitalization rates, and greater insurance premiums.¹⁰⁻¹² On the contrary, adhering to medication therapy improves life expectancy, clinical outcomes, and quality of life.^{7,13-14}

Barriers to Medication Adherence

Medication-taking behavior is extremely complex and varies patient to patient. Patient communication skills, motivation, socioeconomic status and medication regimen complexity may contribute to non-adherence. Poor health literacy, language barriers, and mental illness can create communication barriers preventing patients from having a clear understanding of how to properly take medications. Alternatively, physicians may prescribe a plethora of medications, yet may not have enough time to explain the risks versus benefits of such regimens.¹⁵ Poor understanding of the disease/illness, lack of perceived need or benefit from consuming the medication, and fear of adverse events may decrease patient motivation to take their prescribed medications. Helping patients understand the benefit of taking medications appropriately and preparing patients for potential complications is important to addressing the non-adherence problem. Failure to do so can result in non-adherence once the patient starts to “feel better,” especially if the disease has few visible symptoms, e.g., hypertension. Discontinuation of therapy without consulting a healthcare provider may have serious consequences which could also increase healthcare costs.



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Medication non-adherence is currently a \$290 billion per year problem in the US. Evidence has shown that pharmacists play an essential role in alleviating and resolving this healthcare issue.

- Healthcare reform law provides pharmacists the opportunity to play a more integral role in patient care.
- Through the initiation of the Adherence Pharmacy, pharmacists work with the patient, prescriber, caregiver, and other members of the patient's healthcare team to improve patient outcomes.
- The Adherence Pharmacy employs a combination of MTM, medication synchronization, and adherence packaging to improve patient outcomes.
- Medication adherence packaging serves to remind patients about the significance of each medication and its use, which aids in compliance.
- With adherence blister packs, patients refilled their prescriptions on time, more often, and demonstrated improvements in clinical markers.

Cost of treatment, health insurance coverage, and employment status may also impact adherence. One of the most commonly cited reasons for non-adherence is cost with 19-33% of the patients reporting non-adherence because they cannot afford to pay for their medications.¹⁶⁻¹⁷ Patients prescribed costly medications may omit doses in order to extend their supply, attain partial fills, or fail to fill prescriptions altogether. Additionally, patients on multiple medications or costly medications may have to visit the pharmacy several times a month to get them filled or complete the prescription. The back and forth is stressful and inconvenient for the patient, thereby resulting in the patient either forgetting to get their medication refilled at the right time or failing to pick it up from the pharmacy.

Complexity of medication regimens can also compound non-adherence. The more complex a regimen is, the less likely a patient will be to take all medications appropriately as prescribed by their doctor. Medication adherence is inversely proportional to the number of doses per day, as well as to the duration of the therapy.¹⁸ The higher the number of medications and doses per day, the lower the regimen adherence. For example, the adherence rate for patients taking once-daily dosing

regimens is approximately 80%, yet this declines to 50% in patients taking four-times-per-day regimens.¹⁹ It is evident that barriers to medication-adherence are complex and varied, therefore the solutions to address non-adherence need to be multifaceted.

Solutions to Resolve Medication Non-adherence

Numerous interventions have been documented and carried out with the sole purpose of improving patients' adherence to medications, leading to an improvement in outcomes.²⁰⁻²² Solutions for improving adherence can be broadly classified into three main categories: patient education, cost reduction, and medication regimen simplification.

Education can inform and empower the patient. When patients understand their medication and its place in therapy, this knowledge leads to more

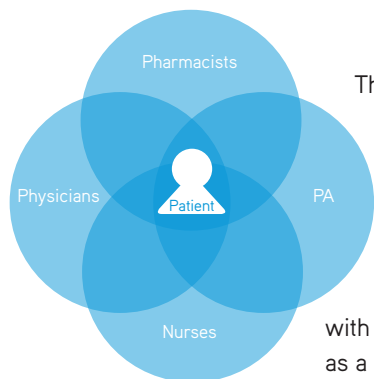
effective communication and a stronger patient-provider relationship. A stronger patient-provider relationship has a tremendous positive influence on patient motivation which leads to improvement in medication regimen adherence. Healthcare providers need to make a concentrated effort to talk one-on-one with patients about their diseases and medications. Education can be further supplemented by providing patients or caregivers with mailed, faxed, or hand-distributed information upon leaving the physician's office or pharmacy.

Cost reduction strategies, such as brand-to-generic substitutions, switching patients from multiple medications to combination therapy or prescription assistance programs, may alleviate some of the financial burden. Keeping costs as low as possible may reduce accessibility and affordability issues, leaving patients more willing to take medications as prescribed. However, patients are often unaware of cost-saving options or are overwhelmed with navigating the system to access these options. A healthcare provider familiar and experienced with these options can help patients navigate the system in order to ensure success.

Simplification of medication regimens can improve adherence by making it easier for patients to keep track of what they are taking. In addition, using medication organizers and unit-dose packaging, and synchronizing medications to limit the number of visits to a pharmacy enhances adherence. These simple changes can influence the patients' behavior and their willingness to fulfill their medication regimen responsibility. Coordinated efforts by the patients' healthcare providers to implement these solutions are imperative for success.

Changes to the Healthcare System and the Role of Pharmacist

Integration and implementation of these adherence-enhancing solutions into practice have posed some challenges. It can be difficult for patients to navigate the system in search of cost-saving options and simplification of medication regimens may require coordinate of disparate physicians. These challenges were further complicated by a shrinking pool of physicians and physicians' lack of time needed for complex patient interactions.²³ All of this has caused healthcare administrators and national policymakers to discuss shifting primary care responsibilities to other healthcare professionals, such as nurse practitioners, physician assistants, and pharmacists.²⁴⁻²⁵



With an greater emphasis on team-based care, pharmacists are shifting into a primary care role.

The 2010 healthcare reform law has provided additional opportunities for pharmacists to play a more integral role in patient care. This law places an emphasis on healthcare delivery with team-based care serving as a driving force for quality improvement, cost containment, and outcomes assessment.²⁶ An explicit team-based model of care is the patient-centered medical home (PCMH). PCMH is

a delivery system wherein patients obtain care from a variety of providers based on their needs.²⁷ Pharmacists participating in team-based care in acute care or outpatient settings have made positive contributions to patient care quality and safe medication use.²⁸ PCMH provides an opportunity for pharmacists to affect the delivery of primary care through various programs and services, including comprehensive medication reviews; identifying, preventing and resolving medication-related problems; optimizing complex regimens; designing adherence programs; and recommending cost-effective therapies.³⁶

Pharmacists are the third-largest group of health professionals in the U.S. and considered one of the most trusted and accessible healthcare providers by patients.^{24,29-30} Many patients visit the pharmacy quarterly, monthly, or even several times during the month. Contrary to this, patients often see their physicians fewer times per year when compared to pharmacists.³¹ Pharmacists are clinically trained to be medication experts. They are trained to educate patients regarding medications, make recommendations to physicians regarding the patient's therapy, identify preventable drug-related problems and adverse events, simplify the medication regimen of the patient, and suggest cost-saving strategies.

Pharmacists play a proactive and pivotal role in addressing medication non-adherence. Pharmacists provide two major categories of interventions: person-independent and person-dependent.²⁰ Person-independent interventions include mailed, faxed, or hand-distributed information and electronic systems, such as electronic pill boxes and caps with programmable reminders and beepers, automated phone calls with interactive components, computer-generated individualized interventions,

cellular mobile devices and applications, and automatic home monitoring systems (e.g., home blood pressure monitors). Person-dependent interventions include non-automated phone calls, medication refill synchronization, and in-person meetings using techniques such as pharmacist-provided medication therapy management (MTM) services via appointment-based models, blister or adherence packaging, and motivational interviewing.²⁰ A pharmacy practice model that uses a combination of person-dependent and person-independent interventions offers a means of integrating and implementing adherence-enhancing solutions. This newly proposed pharmacy practice model could be suitably titled "Adherence Pharmacy."

Adherence Pharmacy

The Adherence Pharmacy (AP) focuses on improving medication adherence by having the pharmacist work with the patient, prescriber, caregiver, and other members of the patient's healthcare team, with the goal of facilitating and improving medication adherence. While the concept of the AP may be new to the profession, interventions delivered within this type of pharmacy are not. In the AP, an appointment-based model (ABM) of practice is followed and patients have scheduled pharmacy visits. Innovative pharmacy practices have been adopting this model of care, empowering the pharmacist and pharmacy staff to establish and cultivate the pharmacist-patient relationship. This model improves pharmacy operations while creating an ongoing conversation with each patient, caregiver and prescriber to help optimize medication use and identify other pharmacists' services that may be beneficial to patients.³² Pharmacy operations become more efficient by reducing the number of inbound calls from patients requesting refills; decreasing the number of times a single patient must be rung out at the register while picking up non-synchronized prescriptions; minimizing the number of separate outreach attempts to prescribers to authorize refills or review medication orders; and consolidating disjointed patient profile reviews into a single comprehensive, monthly review.³³

The AP employs a combination of MTM, medication synchronization, and adherence packaging to improve patient outcomes. MTM services encompass care beyond traditional medication counseling. MTM is designed to maximize the benefits of prescribed medication regimens, increase medication adherence, and reduce the risk of adverse drug events and drug interactions.³⁴⁻³⁵ Additionally, MTM is designed to improve collaboration among pharmacists, physicians and other healthcare

professionals; enhance communication between patients and their healthcare providers; and optimize medication use for improved patient outcomes.⁹ These clinical services can occur in various locations, such as primary care offices, outpatient clinics, home visits, work-site health programs, senior centers, hospitals, and community pharmacists' practices.³⁶ Pharmacist-provided MTM programs and services have positively impacted numerous health outcomes while lowering costs.³⁷⁻⁴³ MTM has been defined as "a distinct service or group of services that optimizes therapeutic outcomes for individual patients [that] are independent of, but can occur in conjunction with, the provision of a drug product."⁴⁴ At the AP, MTM services are provided at each scheduled appointment and in conjunction with dispensing the patients' medications.

Medication synchronization is a key feature of the AP. The pharmacy team coordinates multiple prescriptions and makes them available for pick-up or delivery all at one time. With all prescriptions synchronized, patients are more adherent; leading to improved outcomes and healthier patients.⁴⁵ A study

by Ross et al.⁴⁶ showed that 46% of participants missed doses of medication because their medications had to be refilled on different dates. Participants expressed they would miss fewer doses if all medications could be refilled once a

month. Medication synchronization shifts

the pharmacy staff's focus from passively filling prescription orders at the request of the patient on an unaligned schedule to proactively synchronizing a pick-up date for medications and confirming that the patient is receiving the correct medications each month.⁴⁷

At the AP, pharmacists provide a hands-on approach in simplifying the medication-taking behaviors of patients by promoting the use of medication organizers and reminders. Pillboxes, automated dispensers, electronic pill bottles, watches and pagers, alarm-based programs, pouches, and telephone reminder services are all viable options. Currently, a method that is gaining momentum within the community pharmacy setting is the use of adherence-enhancing packaging. Adherence-enhancing packaging is a type of pharmaceutical packaging designed specifically

to address barriers to patient adherence with respect to ease of identification, clarity of instructions, and visible evidence of medications taken.⁴⁸ This type of packaging employs methods such as blister packs that are labeled with days of the week to keep patients on schedule and includes written directions that stress the importance of complying with the physician-prescribed regimen.⁴⁸ Blister packs have been used in hospitals and long-term care facilities for administering medications in single dose units, but now newer, multi-med packs are being introduced and used in community pharmacies as a way to improve adherence. Blister packs simplify the medication-taking behavior for patients with multiple medications or those that have complex dosing regimens and assist patients with organizing their medications. In conjunction with MTM and medication synchronization, blister packs serve to remind patients about the significance of each medication and its use. At this time, very few community pharmacies are using this technology to improve adherence⁴⁹, yet research findings indicate the positive impact of its use.⁵⁰⁻⁵¹ For example, blister packs have been associated with greater length of treatment and improved adherence compared to traditional prescription vials when evaluating the effect on long-term refill behavior.⁵⁰ Through the use of blister packs patients refilled their prescriptions on time more often, experienced greater adherence to medications, and demonstrated improvements in clinical markers compared to patients receiving their medication packaged in traditional prescription bottles.⁵¹

Each of the interventions provided within the AP impacts an aspect of medication non-adherence. Pharmacists counseling patients and caregivers on their medications and therapy provide education. This in turn breaks down the communication and motivational barriers. Medication-taking behavior is simplified through refill synchronization and the use of blister packs. The ABM provides the patient more consistent contact with a medication expert. Over the years, the pharmacy workflow has operated around patients bringing in new prescriptions, calling for medication refills, and picking up medications at their convenience. In this older model, the pharmacy staff spends time answering phones, contacting physicians and insurance companies, and filling prescription orders. Patients taking multiple medications often visit the pharmacy many times a month, which creates



inefficiency for the patient and the pharmacy.⁴⁷ This operational method is not conducive for pharmacists to perform regular comprehensive medication reviews, provide MTM services, or consult with physicians, patients, or caregivers about their medications. On the contrary, pharmacists at the AP are able to perform medication therapy management services, which provides the opportunity to identify and address the therapeutic and adherence issues that patients may encounter.

Conclusion

It is clear that medication adherence is a problem and a pressing healthcare issue. Evidence has shown that pharmacists play an essential role in alleviating and resolving this healthcare issue. Through the use of real-world adherence strategies and interventions and the initiation of the Adherence Pharmacy, pharmacists, working with patients and providers, may eradicate non-adherence and improve patients' health outcomes.

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