


# Community Pharmacy–Based Adherence Programs and the Role of Pharmacy Technicians: A Review

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## Abstract

**Objective:** To increase pharmacy technician awareness of medication nonadherence enabling them to identify opportunities to participate in the provision of community pharmacy–based adherence programs. **Data Sources:** Articles were identified through searches of MEDLINE/PubMed (1950 through December 2014) using the following search terms: “adherence,” “role of technicians,” “community adherence programs,” “adherence and technician’s role,” “medication synchronization,” “retail pharmacy adherence programs,” and “CMS Star Ratings.” Additionally, resources on adherence programs were used from the American Society of Health-System Pharmacists, the American Pharmacists Association, and the Food and Drug Administration. **Study Selection and Data Extraction:** Articles describing community pharmacy adherence programs, the role of pharmacy technicians in providing these services, and medication synchronization were included. **Data Synthesis:** Nonadherence to medications creates a burden in terms of patient health and leads to high health care costs to the patients, providers, and insurers. Initiatives on pharmacist-led adherence programs have proven to reduce these overall health care–related costs. Pharmacy technicians can have an active role in the management of these adherence programs to reduce the burden on community pharmacists who are running adherence programs. Pharmacy technicians can be responsible for gathering medication histories, organizing patient medication lists, making appointment calls to schedule patients, collecting patient demographic history, conducting follow-up calls, and in promoting the program overall. **Conclusions:** Pharmacy technicians are a valuable asset to the community pharmacists in the process of running adherence programs, and they can work with the pharmacists to coordinate and promote community pharmacy–based medication adherence programs.

## Keywords

pharmaceutical care, technician education training, medication therapy management, adherence, pharmacist/physician issues

## Background

Medication nonadherence occurs when patients do not take their medications as directed by physicians, which can lead to overall poor quality of life and increased hospitalizations. It has been described as a very common and costly complication. Medication nonadherence may result from gaps in care not identified by health care providers. A gap in care can be defined as the failure to translate and utilize medical knowledge effectively by physicians and patients. Statistically, 50% of patients are nonadherent to their pharmacotherapy regimen as prescribed by their physician.<sup>1</sup> Nonadherence to chronic medications leads to worsening of therapeutic outcomes for patients. This results in an increase in morbidity and mortality rates. Acute complications and hospitalizations stemming from nonadherence leads to an increase in health care spend in the United States. The direct and indirect costs related to nonadherence have been

estimated at 290 billion dollars each year in the United States alone.<sup>2,3</sup> Safety issues and suboptimal patient outcomes associated with poor medication adherence are estimated to affect 133 million Americans with at least one chronic disease.<sup>2</sup> Improved self-management of chronic disease states can result in an approximate cost-to-savings ratio of 1:10; meaning that, for every 1 dollar spent in management of chronic disease states, 10 dollars can be saved in health care spending from acute complications of these chronic disease states.

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The engagement of the pharmacy team is very critical in the promotion of patient self-management.<sup>4</sup> The pharmacy team has the potential to interact with patients on a regular basis and to understand the factors that affect the patients' ability to manage their chronic conditions. Medication non-adherence is one of the biggest barriers to the self-management of chronic conditions in patients. Pharmacists are medication-use experts trained to be able to provide health and safety information to the patients and their health care providers to avert possible drug interactions and adverse events, as well as to avoid unnecessary costs from disease state complications or hospitalizations. Pharmacists are able to recognize barriers to patient adherence and have the tools to be able to help patients overcome these barriers. To address the barriers of nonadherence, a patient-centered approach should be used, in which the pharmacy team as a whole can participate to make patients more active in the continuum of decision making about their therapy and related health consequences. Retail pharmacists and pharmacy technicians, being easily accessible in the community, can work with their patients to assist with improving adherence. To improve adherence to pharmacotherapy, which in turn can improve health outcomes, each patient must be assessed individually, and individual targeted interventions should be discussed with the patients.

Many leading pharmacy chains are establishing community-based adherence monitoring programs to help patients in maintaining adherence.<sup>5-8</sup> In such assistance programs, patients are counseled on their medication use by pharmacists. They are introduced to integrated products and services that can help eliminate gaps in care and better engage them with adherence. Many research programs have shown the success of community-based adherence programs where the involvement of pharmacists and pharmacy technicians as a team have reduced hospitalizations, decreased health care spend, and increased personal care.

The intent of this article is to increase pharmacy technician awareness of issues related to medication nonadherence and community-based adherence programs and to provide an understanding of possible reasons for gaps in care and how they could be managed. This article also aims to identify opportunities for pharmacy technicians to assist pharmacists in making such programs successful by fulfilling patient needs.

## Data Sources

The articles for this review were mainly identified through searches of the MEDLINE/PubMed database. The following search terms were used to identify the articles reviewed in this article: "medication nonadherence," "adherence," "role of technicians," "community adherence programs," "adherence and technician's role," "medication synchronization," "retail pharmacy adherence programs," "non-compliance,"

"healthcare savings," and "CMS Star Ratings." Also, these search terms were used to identify resources and articles related to nonadherence from the American Society of Health-System Pharmacists, the American Pharmacists Association, and the Food and Drug Administration. The identified articles relevant to nonadherence and the pharmacy technician's role published between 1950 through December 2014 were included in the review. Articles including specific disease state management adherence programs were excluded from this review.

## What Is Medication Adherence?

The definition of medication adherence varies from institution to institution. In general, medication adherence is defined as the extent to which a person takes medications as prescribed and as directed by their health care providers.<sup>1,4</sup> A patient is considered adherent to their therapy if the patient is taking their medications as prescribed more than 80% of the time.<sup>9</sup> The term adherence refers to a patient's behavior of understanding the recommendations from their providers and taking medications correctly. The extent to which patients are adherent to their medications is simultaneously affected by multiple factors based on patient and provider barriers. Approximately 20% to 30% of patients never initially fill their medications, which lead to an increase in direct and indirect health care costs. Twenty-five percent to 50% of patients then stop their medications within 1 year of treatment initiation, which, in the worst-case scenario, leads to hospitalizations. Thus, medication nonadherence is a growing concern for the health care system, professionals, and payers because of the ample evidence that nonadherence leads to adverse events and higher costs of therapy. By addressing these issues, the pharmacy team can improve adherence and provide cost saving opportunities to their patients.

The mission of pharmacy practice is to provide safe, effective, and appropriate use of medications.<sup>10</sup> When patients underuse or overuse medications, it leads to nonadherence. Because medication nonadherence occurs at a high incidence rate, it is important for the pharmacy team to have the skills necessary to both recognize and educate on the health risks of nonadherence, ultimately leading to the desired economic, humanistic, and clinical outcomes.<sup>11,12</sup> Since 2003, the Center for Medicare and Medicaid Services (CMS) assigns Medicare Part D plans with Star Ratings, which assist Medicare beneficiaries to pick the right plan for themselves. In 2010, health care reform added a quality bonus payment incentive for plans that score high on Star Ratings. Star Ratings are based on a cluster of pharmacy and medical outcome measures that the plans need to achieve for higher ratings to attract beneficiaries. Pharmacy-based outcomes measures including adherence and safety measures account for 45% of Medicare Part D plan ratings.<sup>11</sup> The 45%

pharmacy outcomes measures are leading to new collaboration opportunities between payers and community pharmacies to provide services that would enhance adherence and safety in patients. The CMS Star Rating system is therefore creating the opportunity to address nonadherence issues in order to provide total patient care at community pharmacies. This expands the horizon of direct patient care that pharmacists can provide in community settings. Pharmacists are trained to counsel patients and play a key role in advocating medication adherence but have been missing out on a lot of opportunities to help patients reduce medication costs and in promoting adherence due to other pharmacy responsibilities.<sup>12</sup> Accordingly, pharmacy technicians can play a vital role in promotion, administration, and implementation of community-based adherence programs. Their collaborative and interpersonal skills make them an important part of the pharmacy team for execution of the program. The teamwork of pharmacists and pharmacy technicians has shown successful results in addressing nonadherence and creating cost saving opportunities through pharmacy-based adherence programs.

### Reasons for Nonadherence/Barriers to Adherence<sup>13,14</sup>

Every patient's reasons for nonadherence are unique but there are several main barriers seen across the broad spectrum of nonadherence. There are 2 categories of barriers related to nonadherence: patient barriers and provider barriers.

Patient barriers include the following:

- Cost
- Side effects of treatment
- Personal beliefs and perceptions
- Ignorance
- Forgetfulness
- Lack of resources
- Duration, frequency, and complexity of therapy
- Improper administration technique
- Severity of disease

Patient barriers prove to be the leading cause of nonadherence. Quality health care outcomes depend on the willingness of patients to take their medications correctly. Sometimes patients may discontinue medications if they do not have a quick response to the medication or have unrealistic expectations of the time that it takes for the medication to have a positive effect in the treatment of their specific disease state. They may also stop the medication if they cannot afford the monthly cost of the prescription. Without proper education, patients may not give the therapy long enough to work, deem the therapy nonefficacious, and will discontinue the therapy without consulting their physician or pharmacist. Also, patients experiencing adverse events

from medications are likely to quit within the first month of their therapy. Because of these issues, the patient barriers vary between clinical, humanistic, and economic factors. No single intervention can improve adherence to all existing nonadherent patients. Every patient needs an individualized plan to overcome his or her nonadherence. If these barriers are identified appropriately and accurately, overcoming them can be the most important step in managing adherence.

Provider barriers include the following:

- Patient–physician miscommunications
- Lack of awareness among clinicians about basic adherence management principles
- Apathetic physician attitudes<sup>12</sup>

Provider barriers also play a role in creating adherence problems as patients may not receive the most optimal care required to manage their health conditions. It occurs as most of the providers are unaware of the prevalence of nonadherence and some physicians do not consider addressing nonadherence as a part of their regular practices. These barriers could be managed by proper provider education to make them aware of the prevalence of nonadherence and by providing them with information about active adherence programs within the community to help direct patients in need of these services.

### Community Pharmacy–Based Adherence Programs

Nonadherence to medication regimens causes complex problems in all health care settings, not just in the community pharmacy. Pharmacists and their teams can play a key role specifically in community pharmacy settings because of their increased accessibility to enhance adherence in patients.<sup>15</sup> In general, medication adherence programs are initiatives that aim to improve medication adherence for patients to optimize therapeutic outcomes. These programs help pharmacists identify opportunities for a solution when patients are not taking their medications correctly. Depending on the severity and reasons for nonadherence to therapy, some patients may need face-to-face counseling from pharmacists while some patients may need to be referred to their physicians. To assist patients with maintaining adherence in their daily life, many community pharmacies have already incorporated adherence initiatives such as refill reminders, pill boxes, Personal Medication Lists, smartphone applications, and first fill counseling as a part of their practice.<sup>16</sup> Such initiatives can help patients remember to take their medications in a timely manner and to refill chronic medications regularly. By counseling patients, identifying barriers to nonadherence, and providing resources to patients in the management of adherence, community pharmacists can connect with patients in highly

personalized ways to change a patient's behavior to improve health outcomes and help reduce the costs associated with nonadherence. Fundamentally, adherence programs run by collecting patients' past refill data from insurance claims or store-level reports to determine their adherence status and help them achieve higher adherence through counseling and providing resources that could help them overcome their specific barriers to nonadherence.<sup>15</sup>

Traditionally, pharmacies waited to hear from patients about refilling their prescriptions, resulting in high rates of nonadherence as patients would forget to refill medications due to patient barriers and thus miss doses of their medications. This led to the introduction of automatic refill programs in community pharmacies, which encourage patients to pick up their refilled medications on a regular basis. These automatic refill programs also help the pharmacy staff to identify if patients were potentially nonadherent to their regimen. Unfortunately, automatic refill programs can only identify irregular filling of prescriptions and do not address or identify all of the patient-specific barriers to adherence. This creates a need for community-based adherence programs where all the gaps of nonadherence can be addressed and improved. With the new initiatives of medication synchronization programs and appointment-based models (ABM), community pharmacies are able to better address both patient and provider barriers. Pharmacy teams proactively contact the patients monthly when they are due to fill their prescriptions.<sup>5,7</sup> Along with educating patients on side effects, drug interactions, and directions of the medication use, pharmacies have started medication synchronization as a part of their plan to increase adherence. Medication synchronization programs eliminate the need for separate call-ins and pick-ups for medications throughout the month as all the patient's medications are synchronized to be refilled on the same day of each month. An appointment is scheduled for the patient to come in and pick up all their medications at one time. Prior to this appointment, patients are contacted to confirm the prescriptions that are to be filled and to identify any changes in the regimen. These programs are designed to fill the gaps in patient care and aid in better coordinating patient-physician relationships by identifying potential interventions in terms of adherence or changes in therapy and addressing them with the patients or physicians as needed. Many national attempts such as *Script Your Future* and *Simplify My Meds* have also been designed to promote adherence to medications on a national level. *Script Your Future* partners with different health care professionals and organizations to help patients in management of their health problems by providing tools to manage their medications. *Simplify My Meds* helps pharmacists consolidate and coordinate a patient's prescriptions so they can be filled on the same day each month, improving patient adherence and revolutionizing pharmacy operations.<sup>17</sup>

Many national community pharmacy chains have been able to successfully implement adherence initiatives showing positive impacts in their patients. Walgreens demonstrated that pharmacist-led, face-to-face patient counseling significantly improves adherence to statin and thyroid medications in new-to-therapy patients by implementing their community adherence program.<sup>15</sup> They conducted a retrospective cohort study in 76 community pharmacies located in Midwest United States. Their adherence program primarily included 2 face-to-face patient counseling sessions covering a motivational counseling and a follow-up session that helped improve patient medication adherence to new maintenance medications. At the end of the study, the intervention group had an increase in Medication Possession Ratio (MPR) by 4.9% compared to the placebo group. MPR measures the percentage of time a patient has access to their medication and may be measured using pill count or refill data. The results of this study show that patients who participated in the counseling sessions were able to manage drug therapy better, which could potentially improve long-term clinical outcomes.

Another successful program run by Valu-Med Pharmacy in Oklahoma includes promoting adherence via the *Simplify My Meds* initiative.<sup>18</sup> *Simplify My Meds* helps pharmacists consolidate and coordinate a patient's prescriptions so they can all be refilled on the same day each month, improving patient adherence and revolutionizing pharmacy operations.<sup>17</sup> The program at Valu-Med Pharmacy is unique in that they have assigned a technician as the point-person involved in the daily management of the program. The pharmacy team calls the patient ahead of the refill date and looks further into what prescriptions need to be filled and if there were any changes in therapy that need to be addressed.

Medication synchronization programs have also been widely utilized in many community pharmacy chains. One such Minnesota-based community pharmacy chain's model, Thrifty White Pharmacy, launched the ABM, which also involves synchronization of medications.<sup>5</sup> The ABM is a patient care service where each patient enrolled has a designated appointment day to pick up all medications. Ten days prior to their prescriptions being filled, the customer receives a call from the pharmacy to confirm the prescriptions to be filled and to review any possible medication changes. On the prescription pickup day, the pharmacist will sit down with the patient to review the prescription regimen, monitor changes from any doctor or hospital visits, and check for any possible drug interactions.

Adherence programs are also run in ambulatory care clinics and hospitals, which, in these settings, are most commonly organized to manage specific disease states. For example, anticoagulation clinics, diabetes management clinics, and cholesterol management clinics also focus on adherence of medications as a part of their counseling, along with the selection of the optimal therapy for patients.

Such clinics are run with the goal of coordination between team members from multiple disciplines and are tailored so that each professional team member is responsible for the specialized area they were trained in. Pharmacy technicians receive special training to meet the complexities of the role in these programs.

## The Role of the Pharmacy Technician

Pharmacy technicians have played an essential role in modern pharmacy practice. The traditional responsibilities of pharmacy technicians included direct provision of medication-related care by compounding and dispensing medications, managing drug inventory, and entering prescriptions in the computer, all under the direct supervision of a pharmacist. Technicians also participate in medication safety processes by accurately completing data entry, ensuring the selection of correct medication, and informing pharmacists of anything unusual in the workflow.<sup>19</sup> In some pharmacy practice settings—*Tech-check-tech*—the checking of a technician's order filling accuracy by another technician rather than a pharmacist has even been promoted.<sup>20</sup> The role of pharmacy technicians is advancing to provide patient-centered care by taking on new responsibilities in drug distribution functions. The evolution in health care and pharmacy practice is leading to many opportunities for pharmacy technicians to get involved with clinical programs and to assist in providing nontraditional pharmacy services to patients. With the expanding direct patient care role, pharmacists are counting more and more on highly skilled pharmacy technicians who can handle the added responsibilities in daily pharmacy practice. Today, depending on state laws, pharmacy technicians around the country are undertaking many tasks that once used to be done solely by pharmacists such as dispensing medications, compounding, taking prescriptions over the phone, transferring prescriptions, managing inventory, and helping with management of error-reduction while filling prescriptions.<sup>21</sup> To provide pharmacy technicians with more opportunities to participate in patient care, the Pharmacy Technician Certification Board offers a Pharmacy Technician Certification Program. This program enables technicians to expand their responsibilities by giving them a sense of empowerment and to work more effectively with pharmacists on best patient care practices. Pharmacy technicians have successfully embraced the certification program and their responsibilities by showing that they are ready and able to play a bigger role in additional clinical responsibilities. With well-trained pharmacy technicians stepping forward and taking on these responsibilities, pharmacy technicians play an integral role in daily pharmacy services.

Along with all of these responsibilities, pharmacy technicians can also play a primary role in helping run efficient

community pharmacy adherence programs. Motivating and aiding patients in taking their medications correctly is a tedious task. With the additional assistance of a pharmacy technician, pharmacists can perform their responsibilities related to medication adherence with more efficiency and would also be able to devote more time in the direct patient care role. To run community adherence programs not only includes counseling patients and improving therapeutic outcomes but it also includes many administrative tasks including gathering medication histories, administering adherence assessments to patients, organizing patient medication lists, making initial appointment calls, collecting patient histories, conducting initial scheduling and reminder calls as well as follow-up calls, and establishing and maintaining strong patient relationships. Technicians can act as a foundation of these duties and can help pharmacists run an efficient and successful adherence program within the pharmacy.

Initial steps involved in starting the program process includes running reports using workflow software to collect patient data in order to identify which patients are not adherent to their medications. Referring to the report, pharmacy technicians can conduct the first appointment calls and can introduce patients to the benefits and features of the program. Pharmacy technicians can also promote the program by handing out brochures and specifically targeting their marketing toward nonadherent patients at pick-up and drop-off windows. Also, technicians can be assigned a daily call log during their shift to reach out to the nonadherent patients identified from reports, which can be evaluated by pharmacists weekly. As staff members who may interact with the patients the most, pharmacy technicians can also build off of the strong relationships they have with patients to promote clinical services. This existing relationship helps technicians readily approach those patients with low adherence to direct them to pharmacists for counseling or to participate in one of the adherence services that may be offered at the pharmacy. Pharmacy technicians can respond to calls from physician's offices and patients regarding any queries about the program. When patients enroll in a clinical program at the pharmacy, a doctor's office may require the receipt of patient consent forms before they give out any patient information to the pharmacist such as medication lists or lab values. Technicians could carry the responsibility of communication with physician offices and faxing required documents. Also, when patients show up for their first appointment, pharmacy technicians can sit down with them, collect patient demographic information, and provide adherence assessments to patients, so that pharmacists would have all of the basic patient information before commencing the session. Once the session has been completed and interventions have been identified by the pharmacists, technicians can document the data on paper or in an electronic system as required by the program. Technicians can track the improvement in adherence and conduct the initial

scheduling, reminder, and follow-up calls with patients to make sure those patients were satisfied with services provided by the pharmacist and to ensure that all of their questions were answered.

The pharmacy technicians can also be a big asset to the appointment-based model and medication synchronization programs. Pharmacy technicians can promote these programs directly to patients who need help in managing multiple medications that would be identified through the nonadherence report organized based on the patient's fill history. Once the patient is enrolled in the program, technicians can make the initial call to patients prior to their appointment each month to confirm their prescriptions and make sure there were no changes in therapy. Pharmacy technicians can also play a valuable role in filling synchronized medications for patients. The pharmacist would then review the patient's medication profile at the appointment and provide counseling to the patients to improve therapeutic outcomes. Pharmacy technicians again can make the follow-up calls and address any questions from patients. Many such programs have shown success by decreasing health care costs and hospital visits. Thus, pharmacy technicians can act as a backbone of these adherence programs and take the lead in its successful implementation.

## Discussion

Inappropriate use of prescription medications has been an issue for more than 4 decades, which has resulted in decreased quality of life and increased morbidity and mortality rates. US health care spends over 300 billion dollars each year for patients who do not take their medications as prescribed. To save money in health care and improve the quality of life of patients, CMS introduced Star Ratings. Star Ratings drive the health plans to be more efficient in the services they provide to beneficiaries to receive bonuses from CMS. Forty-five percent of Star Ratings rely on adherence and safety measures of beneficiaries. It has been difficult to understand the needs of each individual patient and help them manage their medications better. Trends have shown that patients are more receptive to suggestions from a community pharmacist as community pharmacists are easily accessible to patients.

Many health plans are paying community pharmacies to design and run a community pharmacy adherence program that can help patients manage their health better. Pharmacists rely on pharmacy technicians to take the lead of such programs as a part of their daily practice. Pharmacy technicians get the opportunity to talk to patients about their general health conditions when patients arrive to pick-up or drop-off medications. Pharmacy technicians can direct any concerns to pharmacists so they can address and resolve any ongoing problems with a patient's medications

at a very early stage to prevent any major worsening of the conditions. With the expanding roles for direct patient care in the pharmacy setting and the increased emphasis on adherence and safety measures, pharmacy technicians are well positioned to become more involved and to take on greater responsibilities within such specialized roles of community-based adherence programs.

## Conclusion

Pharmacy technicians have the skills and the training to work in coordination with pharmacists in both the implementation and management of community pharmacy-based adherence programs by interacting directly with patients, answering physician queries, and taking on the administrative responsibilities of the program.

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