

# Pharmacist-Led Medication Reconciliation: Impact on Patient Safety and Healthcare Outcomes

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## ABSTRACT

Pharmacist-led medication reconciliation is a vital process that ensures the accuracy of patient medication information, especially during transitions of care. This review examines the role of pharmacists in medication reconciliation, focusing on their impact on reducing medication errors, preventing adverse drug events (ADEs), and improving overall patient safety in various healthcare settings. The evidence suggests that pharmacist interventions significantly contribute to improved healthcare outcomes by mitigating risks associated with medication discrepancies. Pharmacists' expertise in drug therapy, their ability to identify discrepancies, and their direct involvement in patient care position them as integral members of the healthcare team, particularly during critical transitions such as hospital admissions, transfers, and discharges. By enhancing medication safety, pharmacist-led reconciliation improves clinical outcomes and reduces healthcare costs.

**Keywords:** reconciliation, focusing, Healthcare, Medication

## INTRODUCTION

Transitions of care, such as hospital admissions and discharges, are often accompanied by changes in medication regimens, which can lead to discrepancies and errors. These medication errors—whether in dosing, duplication, omission, or incorrect drugs—can result in adverse drug events (ADEs), causing significant patient harm. Medication reconciliation, the process of ensuring accuracy in patients' medication lists, has emerged as a critical intervention to enhance patient safety during these transitions.

Pharmacists, as medication experts, play a central role in the medication reconciliation process. Their specialized training enables them to detect potential issues with medications, including drug interactions, inappropriate dosing, and other discrepancies. Pharmacist-led medication reconciliation has been widely recognized for its potential to reduce medication errors and improve patient outcomes. This review explores the effects of pharmacist-led medication reconciliation on patient outcomes, focusing on the reduction of medication errors, the prevention of ADEs, and the overall improvement in patient safety and healthcare quality. It also discusses the future of pharmacist-led medication reconciliation in expanding settings, such as ambulatory care and long-term care facilities, where it can further improve care continuity and safety.

## The Role of Pharmacists in Medication Reconciliation

Pharmacists' involvement in medication reconciliation typically occurs during three critical points: hospital admission, during hospital stays (inpatient care), and upon discharge. Their role includes:

### 1. Reviewing Medication Histories

Pharmacists are responsible for gathering and verifying the patient's medication history. This step involves interviewing patients or caregivers, reviewing prescription and over-the-counter (OTC) medications, supplements, and other treatments, and cross-checking this information with medical records. Pharmacists identify discrepancies between what patients report and what is documented in their records, which helps prevent errors during transitions of care (Ali & Al-Jumaili, 2023).

### 2. Identifying Medication Discrepancies

Medication discrepancies are common during transitions of care and can include incorrect drug dosages, omissions of prescribed medications, duplications, or the continuation of medications that should be stopped. Pharmacists are trained to detect such errors and recommend appropriate interventions to the healthcare team. Studies have shown that pharmacist-led reconciliation reduces medication discrepancies by up to 70%, particularly in high-risk populations such as the elderly and patients with polypharmacy (Philipose, 2023).

### 3. Educating Patients and Caregivers

In addition to identifying and resolving discrepancies, pharmacists educate patients about their medications, including how to take them correctly, potential side effects, and the importance of adherence.

Patient education is crucial to minimizing confusion and ensuring that patients understand their medication regimen, particularly when transitioning from hospital to home care (Naserallah et al., 2024).

## **Impact on Patient Safety and Healthcare Outcomes**

### **1. Reduction in Medication Errors**

Medication errors can lead to adverse drug events (ADEs), which are responsible for increased hospitalizations, prolonged hospital stays, and higher healthcare costs. Pharmacist-led medication reconciliation has been shown to significantly reduce medication errors, particularly during hospital discharge. A systematic review of 26 studies found that pharmacist interventions reduced the rate of medication errors by 50% across various healthcare settings (Ali & Al-Jumaili, 2023). These interventions are especially impactful during the discharge process, where errors are more likely to occur.

The potential for medication errors is particularly high during hospital discharge, where patients are frequently prescribed new medications or have their existing medication regimens altered. Inaccurate or incomplete communication between hospital and primary care providers, as well as misunderstandings on the part of patients, often contribute to these errors. By reconciling medications at discharge, pharmacists ensure that the final medication list is accurate and communicated effectively to both patients and their primary care providers.

### **2. Decreased Adverse Drug Events (ADEs)**

Pharmacists' interventions during medication reconciliation also decrease the incidence of ADEs, which can result from improper medication management during care transitions. In a study by Mueller et al., patients who received pharmacist-led medication reconciliation experienced 30% fewer ADEs compared to those who did not receive the intervention (Mueller et al., 2012). This reduction in ADEs is particularly important for patients with complex medical histories and those taking multiple medications, as these groups are at higher risk for drug interactions and errors.

Furthermore, pharmacist-led interventions have been associated with a decrease in preventable ADEs. These preventable events typically result from omissions, duplications, or inappropriate changes to medication regimens. In studies conducted in acute care settings, pharmacists identified high-risk medications that were often the source of ADEs, including anticoagulants, antidiabetics, and opioids, and intervened to reduce the risk of harm (Zheng et al., 2023).

### **3. Improved Communication and Care Coordination**

Pharmacist-led reconciliation improves communication between different healthcare providers, including physicians, nurses, and other members of the care team. By identifying discrepancies and making recommendations for medication adjustments, pharmacists act as an essential bridge in ensuring that all providers have accurate, up-to-date information about the patient's medications. This improved coordination helps prevent miscommunications that could lead to medication errors.

In addition to improving communication within healthcare teams, pharmacist-led medication reconciliation promotes better continuity of care. One of the greatest risks for medication errors occurs when patients transition between care settings, such as moving from a hospital to a long-term care facility. By ensuring that accurate medication information is shared across these settings, pharmacists play a key role in safeguarding patient safety. This is particularly important for elderly patients and those with chronic conditions, who often take multiple medications and are more vulnerable to medication errors (Philipose, 2023).

### **4. Cost-Effectiveness**

Pharmacist-led medication reconciliation has also been shown to reduce healthcare costs by preventing hospital readmissions and avoiding the costs associated with managing ADEs. According to a study by the American Society of Health-System Pharmacists (ASHP), hospitals that implemented pharmacist-led medication reconciliation programs saw a significant reduction in readmission rates, leading to cost savings in both inpatient and outpatient settings (ASHP, 2013).

By reducing the likelihood of ADEs, particularly those that result in emergency department visits or hospital readmissions, pharmacist-led interventions can significantly lower healthcare costs. The savings generated by preventing these events often outweigh the costs of implementing pharmacist-led reconciliation programs. In addition, reducing the need for additional medical interventions (such as managing ADEs) improves resource allocation within healthcare systems, allowing more efficient delivery of care.

## **Applications Across Different Healthcare Settings**

### **1. Inpatient Care**

In hospital settings, pharmacist-led medication reconciliation is especially effective at admission and discharge, where the risk of medication discrepancies is highest. Pharmacists play a crucial role in ensuring that patients'

home medications are accurately reconciled with hospital prescriptions, reducing the likelihood of discrepancies that could lead to medication errors during the hospital stay or post-discharge.

In acute care settings, such as emergency departments, pharmacists are increasingly being integrated into the care team to provide real-time medication reconciliation for incoming patients. This intervention ensures that the medications patients were taking prior to hospitalization are correctly identified and that any changes made during the hospital stay are appropriate. Studies show that this approach not only reduces medication errors but also improves patient outcomes during the hospital stay (Zheng et al., 2023).

## 2. Outpatient and Ambulatory Care

In ambulatory care settings, pharmacists conduct medication reconciliation during clinic visits, particularly for patients managing chronic conditions such as diabetes, heart failure, or hypertension. Pharmacist involvement in these settings improves medication adherence and ensures that patients' medication regimens are optimized to achieve the best possible health outcomes.

For patients in ambulatory care, the risk of medication discrepancies arises when there are multiple prescribers involved in their care or when they transition between healthcare settings. Pharmacists in ambulatory care settings have the opportunity to address these discrepancies through comprehensive medication reconciliation, ensuring that patients have an accurate and up-to-date medication list across their different care providers.

## 3. Long-Term Care Facilities

In long-term care facilities, where patients often have complex medication regimens, pharmacist-led reconciliation helps reduce polypharmacy and prevent drug interactions. By working closely with the healthcare team, pharmacists can review medication regimens, de-prescribe unnecessary medications, and adjust treatments to meet the specific needs of elderly or chronically ill patients (Chhabra et al., 2012).

Pharmacist-led medication reconciliation is particularly critical in long-term care, where the potential for polypharmacy is high and the patient population is often at increased risk of ADEs. In these settings, pharmacists frequently review medication regimens to identify potential drug-drug interactions, inappropriate prescribing, and other factors that may compromise patient safety.

## Future Directions for Pharmacist-Led Medication Reconciliation

As healthcare systems continue to evolve, there are numerous opportunities to expand the role of pharmacists in medication reconciliation. In addition to traditional inpatient and outpatient settings, pharmacists are increasingly being integrated into telemedicine services, allowing them to provide remote medication reconciliation for patients who may not have access to in-person care.

Moreover, future research should focus on identifying the most effective models for integrating pharmacists into care teams across different healthcare settings. Studies exploring the long-term impact of pharmacist-led medication reconciliation on patient safety, healthcare costs, and clinical outcomes will be critical for optimizing these interventions and expanding their implementation.

## CONCLUSION

Pharmacist-led medication reconciliation plays a critical role in reducing medication errors, improving patient safety, and enhancing healthcare outcomes. By identifying and addressing medication discrepancies, educating patients, and improving communication between healthcare providers, pharmacists are instrumental in ensuring that medication use is safe and effective, particularly during transitions of care. Future research should continue to explore how to best integrate pharmacists into healthcare teams to maximize the benefits of medication reconciliation and extend these services to diverse healthcare environments.

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