

## Assess participation of Pharmacists among health care staff for Patients with Chronic Diseases

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Received: 17.08.2024

Revised: 15.09.2024

Accepted: 07.10.2024

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### ABSTRACT

**Background:** Chronic diseases are a primary cause of mortality and morbidity globally, necessitating effective, coordinated care among diverse healthcare professionals. In interprofessional teams within hospital settings, each member—particularly pharmacists—contributes unique expertise. Pharmacists' roles in medication management, patient education, and therapy optimization are vital in managing chronic diseases and enhancing therapeutic outcomes. However, the full scope of pharmacists' contributions within these teams remains underexplored, especially concerning their impact on patient outcomes, team dynamics, and satisfaction.

**Methods:** A comprehensive literature review was conducted, focusing on studies published in PubMed, Google Scholar, EBSCO, Scopus, and Cochrane Library databases. Search terms included "pharmacist," "interprofessional healthcare," and "chronic disease." Of the initial 340 articles, 17 met the inclusion criteria, discussing aspects of interprofessional healthcare involving pharmacists in chronic disease management, across five dimensions: partnership, coordination, cooperation, shared decision-making, and therapeutic outcomes.

**Results:** Findings indicate that pharmacist involvement significantly enhances interprofessional collaboration, particularly in medication reconciliation, patient education, and monitoring for chronic disease management. Pharmacists' contributions to interprofessional teams foster shared decision-making and improved therapeutic outcomes, reducing medication errors and supporting adherence to treatment protocols. However, barriers such as resource constraints and role overlaps can hinder effective coordination.

**Conclusion:** Pharmacists play an essential role in chronic disease management within interprofessional teams, improving patient care quality and therapeutic success through enhanced communication and coordination. Further studies are warranted to explore strategies for integrating pharmacists more effectively into team-based chronic disease care, maximizing their role in patient-centered care and long-term health outcomes.

**Keywords:** reconciliation, patient education, Pharmacists, Scholar

### INTRODUCTION

Chronic diseases have become a growing public health issue worldwide, contributing significantly to mortality, disability, and healthcare costs. Managing these conditions effectively requires a coordinated effort from various healthcare providers. In hospitals, chronic diseases are typically managed by an interprofessional care team, led by a medical doctor, that includes general practitioners, medical specialists, nurses, pharmacists, psychologists, and other professionals. In this team setting, specialists may contribute diagnostic insights or perform specific technical procedures but generally do not oversee the long-term management of a patient's health. Instead, they often act as consultants, aiding primary care physicians in making informed clinical decisions (1, 2). Effective chronic disease management within these teams hinges on seamless communication, cooperation, and coordination among all members. Without these essential components, team members may experience work fatigue, misunderstandings, or even conflicts, which can hinder patient outcomes (3). As such, including all

team members in decision-making not only fosters a cooperative work environment but also allows each professional to leverage their expertise, leading to innovative solutions and high-quality care (3).

Pharmacists play a crucial role in interprofessional teams by contributing their unique expertise in medication management and supporting the overall care of chronic disease patients. Their responsibilities extend beyond the traditional scope of dispensing medications; pharmacists actively participate in clinical tasks such as reconciling medications, detecting potential drug interactions, monitoring laboratory results, extending prescriptions, and educating patients on medication use (4). These activities are essential in preventing medication errors, which are especially prevalent in patients with complex, chronic conditions who may be taking multiple medications. Moreover, pharmacists advocate for patients by periodically reviewing prescriptions to ensure each medication remains necessary, effective, and beneficial. In this way, pharmacists act as a safeguard within the healthcare team, helping to optimize medication therapy and reduce the risk of adverse effects from polypharmacy (4).

However, pharmacists often face considerable constraints in terms of time and resources, limiting their ability to conduct patient follow-ups beyond regular clinic hours. Nevertheless, they frequently dedicate nonclinical days to address patient concerns, particularly when requested by physicians or nurses to assist with treatment challenges. This commitment underscores the value pharmacists bring to interprofessional care, as they offer essential follow-up care that might otherwise be unavailable to patients facing complex medication-related issues (4). In supporting both patients and other healthcare providers, pharmacists not only address immediate drug therapy concerns but also play a role in longer-term patient outcomes by ensuring continuity and adherence to prescribed treatments.

Despite the valuable contributions of pharmacists to chronic disease management, their role within interprofessional teams remains insufficiently explored. Research on pharmacists' involvement often focuses narrowly on their medication-related duties, overlooking their broader impact on therapeutic outcomes, team dynamics, and patient satisfaction. Thus, a comprehensive understanding of the pharmacist's role in interprofessional healthcare teams is necessary to maximize their potential contributions. This review seeks to address this gap by examining the pharmacists' involvement in chronic disease management through various lenses, including partnership, coordination, collaborative decision-making, and their influence on patient outcomes (5). By exploring these aspects, this review aims to shed light on how pharmacists, as integral members of interprofessional teams, can improve healthcare outcomes for patients with chronic illnesses.

## METHODS

This review focused on articles published in PubMed, Google Scholar, EBSCO, Scopus, and the Cochrane Library databases. Keywords used in the search included "pharmacist," "interprofessional healthcare," and "chronic disease." The search process was conducted. Initially identified articles were screened, and review articles as well as those that did not focus on pharmacists were excluded from consideration.

The search yielded a total of 340 articles. Of these, 40 articles were excluded as they were reviews, 300 were excluded for lacking relevance to interprofessional care, 283 were excluded because the interprofessional teams discussed did not include pharmacists. In the end, 17 articles met the inclusion criteria, discussing interprofessional healthcare, pharmacists, and chronic disease

**Table 1.** Interprofessional Care Dimensions Discussed in This Study

No	Reference	Interprofessional Care Team	Interprofessional Care Dimension Discussed					
			Partnership	Coordination	Cooperation	Shared Making	Decision-	Therapeutic Outcome
1	<a href="#">Guilcher et al<sup>6</sup></a>	Doctor, pharmacist, nurse	-	-	✓	-	-	-
2	<a href="#">Cain et al<sup>3</sup></a>	Doctor, nurse, pharmacist, family therapist, pastor	-	✓	✓	✓	-	-
3	<a href="#">Powell et al<sup>7</sup></a>	Doctor, pharmacist, nurse	✓	✓	-	-	-	-
4	<a href="#">Wodskou et al<sup>8</sup></a>	Doctor, pharmacist, nurse	-	✓	✓	-	-	-
5	<a href="#">Probst et al<sup>9</sup></a>	Physical therapist, doctor, nurse, pharmacist, nutritionist	✓	-	✓	-	-	-
6	<a href="#">Lehnbom et al<sup>10</sup></a>	Doctor, pharmacist, nurse	-	-	✓	-	-	-
7	<a href="#">Gordon et al<sup>11</sup></a>	Doctor, pharmacist	✓	-	-	-	-	✓
8	<a href="#">Zschoche et al<sup>12</sup></a>	Doctor, pharmacist, nurse	✓	✓	✓	-	-	-
9	<a href="#">Cope et al<sup>13</sup></a>	Doctor, pharmacist, nurse	✓	✓	-	✓	-	✓
10	<a href="#">Silvaggi et al<sup>14</sup></a>	Doctor, pharmacist, nurse	-	✓	-	-	-	-
11	<a href="#">Ulrich et al<sup>15</sup></a>	Doctor, pharmacist, nurse	✓	-	✓	-	-	-
12	<a href="#">Lublóy et al<sup>16</sup></a>	Doctor, pharmacist, nurse	-	✓	-	✓	-	-
13	<a href="#">Smith et al<sup>17</sup></a>	Doctor, pharmacist, nurse	-	-	✓	✓	-	-
14	<a href="#">Lelubre et al<sup>18</sup></a>	Doctor, pharmacist, nurse	✓	-	✓	-	-	-
15	<a href="#">Chan et al<sup>19</sup></a>	Doctor, pharmacist, nurse	✓	✓	✓	✓	-	-
16	<a href="#">Santschi et al<sup>20</sup></a>	Doctor, pharmacist, nurse	-	-	✓	-	-	-
17	<a href="#">Turner et al<sup>21</sup></a>	Doctor, pharmacist, nurse	✓	-	-	-	-	-

## RESULT

This review examines interprofessional collaboration across several dimensions: coordination, cooperation, joint decision-making, and partnership (5). Additionally, clinical outcomes were included as a fifth dimension to evaluate the effectiveness of patient therapies, as successful interprofessional care is often reflected in improved patient clinical outcomes.

### Chronic Diseases

Chronic diseases are the primary causes of mortality and morbidity in Europe, impacting wages, income levels, workforce participation, and productivity, while also contributing to early retirement, high turnover, and disability. Increasing spending on long-term care across Europe will necessitate a greater allocation of both public and private resources. Common chronic diseases include cardiovascular disease, diabetes, asthma, and chronic obstructive pulmonary disease (COPD). As survival rates improve and illness durations lengthen, additional conditions—such as cancers, HIV/AIDS, mental health issues (like depression, schizophrenia, and dementia), and disabilities such as visual impairment—are now recognized as chronic conditions. While many chronic diseases are associated with an aging population, lifestyle factors like smoking, diet, physical activity, and genetic predispositions are also important contributors. Chronic diseases typically require coordinated, long-term management from multiple healthcare professionals with access to necessary medications, equipment, and social care (6). This review explores interprofessional collaboration in managing chronic diseases across five key dimensions: partnership, coordination, cooperation, shared decision-making, and therapeutic outcomes.

### Partnership

Interprofessional healthcare teams generally include community health workers, care managers, and social workers, all working closely with patients to help them navigate complex healthcare systems, address health needs, and remove barriers to good health (7). These teams develop interdisciplinary interventions (in fields like nursing, physical therapy, and nutrition) to assess patient eligibility for standard care and ensure adherence to treatment (8). Each healthcare professional should have a positive attitude toward their teammates and feel comfortable when another professional performs a specific service, such as pharmacists managing drug therapies (9).

For example, a working group of clinical pharmacists and pharmacist administrators collaborated with doctors and nursing leaders to identify high-risk patients and manage naloxone prescribing and dispensing (10). The presence of interprofessional healthcare teams, including doctors, pharmacists, nurses, and social workers, can also foster patient loyalty to specific healthcare locations (11).

The interprofessional teams, comprised of diverse professionals, require openness, a willingness to compromise, and a clear understanding of each role (12). Team members may come from different organizations and age groups; for instance, junior doctors partnered with senior nurses to share health information and manage patient care with a structured approach within nursing (13). Pharmacists are essential in team-based care, helping build strong networks with doctors and nurses within health and social services (14).

In managing chronic conditions such as hypertension, diabetes, and hyperlipidemia, pharmacists as interprofessional partners have proven beneficial, also assisting with smoking cessation programs (15). Physicians and nurses often consult with pharmacists to implement adherence strategies for patients who struggle with compliance in a hospital setting (16). Other healthcare professionals, like dentists, occupational therapists, physical therapists, and speech pathologists, can positively impact patient care by emphasizing nutrition across specialties (15).

Interprofessional teams often include prescribers and non-prescribers to comprehensively evaluate prescribing practices, such as developing self-management kits for COPD and heart failure patients (18). Some hospital-based multidisciplinary teams partner with parents of children with chronic conditions (e.g., chronic kidney disease) to provide collaborative support (19). Physicians also take into account pharmacist recommendations in medication management, fostering mutual respect in the healthcare hierarchy (20).

Partnerships in interprofessional care strengthen the contributions of all team members. Pharmacists, for example, perform more effectively within these teams with adequate support from other professionals.

### Coordination

In interprofessional healthcare teams, members support one another by focusing on complementary tasks that energize the team (3). These teams provide comprehensive services, including patient assessments, service coordination, interventions, follow-up, and advocacy (7).

In one coordinated approach, general practitioners, nurses, and pharmacists collaborate to support COPD patients transitioning from hospitals to home settings (22). Another example is a working group at Johns Hopkins Hospital, which tackled barriers to naloxone prescribing in outpatient settings (10). Primary care providers and pharmacists also work together on drug procurement and management, including for antiretroviral drugs (11).

Coordination among healthcare professionals is critical, particularly when roles overlap. Pharmacists' roles sometimes overlap with those of other professionals, leading to potential conflicts that must be carefully managed (23). Effective coordination in interprofessional teams has shown to reduce treatment costs for patients by optimizing health service utilization (24). Junior doctors, senior nurses, and pharmacists often work in unison to deploy new interventions efficiently (13).

Healthcare professionals—such as doctors, nurses, pharmacists, and dentists—can positively influence patient care by coordinating their nutritional messaging across specializations (25). Pharmacists often act as coordinators within interprofessional teams, reinforcing their value in helping manage chronic diseases (26). When treating patients with multiple morbidities, nurses often coordinate referrals as part of the collaborative care process (21).

In chronic disease management, each healthcare professional contributes according to their expertise, avoiding interprofessional conflicts while focusing on improving patient outcomes.

### **Cooperation**

Collaboration in designing personalized treatments, offering patient education, and discussing treatment options is integral to the work of interprofessional teams (27). Team-based cooperation ensures that patients with severe illnesses receive comprehensive care across various healthcare sectors (22). For instance, a primary care physician and pharmacist might jointly treat patients with multiple chronic conditions (28).

A collaborative approach was used to develop a counseling program to improve therapeutic adherence and physical activity in patients with leg ulcers (29). At a public hospital in Neuchâtel, Switzerland, an infectious disease physician and nurse implemented adherence strategies for chronic disease patients and worked closely with local pharmacies (30). Primary care prescribers and pharmacists have collaborated to reduce the prescription of inappropriate drugs, enhancing patient safety (17).

Effective cooperation between multidisciplinary team members, such as in HIV care, involves diverse professionals, including rehabilitation specialists and HIV specialists, working together to prevent disabilities in HIV patients through services like physical therapy (31). In managing outpatient hypertension, interprofessional teamwork involving nurses, pharmacists, and doctors has led to improved patient outcomes (32). In some cases, outpatient pharmacies assist in controlling naloxone distribution through interprofessional collaboration (10).

When healthcare teams work together to evaluate medication kits and provide home-based care, outcomes for chronic patients improve, particularly with pharmacist involvement in the care team.

### **Shared Decision Making**

Interprofessional teams actively involve all members in the decision-making process to generate creative solutions and leverage individual expertise (3). Given the complexity of healthcare settings, effective interprofessional decision-making requires accurate information sharing, clear communication, appropriate follow-up, and consensus on treatment options (24). Doctors, often the main point of referral, play a key role in coordinating these teams to ensure effective implementation of health programs (26).

For instance, doctors might recommend that community pharmacists provide drug management counseling (28). Pharmacists contribute by optimizing treatment regimens, which has shown to reduce pain scores in certain populations (34). In some cases, however, treatment plans may be discontinued without full team agreement (11).

Typically, the team leader—often a doctor—holds primary responsibility for therapeutic decisions, with other team members working toward consensus on patient care.

### **Therapeutic Outcome**

Chronic disease treatment often involves a variety of approaches, including surgery, physical therapy, psychological counseling, radiotherapy, and drug therapy. In developed countries like Australia, drug therapy constitutes a substantial portion of healthcare spending (35). Managing and treating chronic diseases often requires large quantities of medications, with pharmacists playing a key role both clinically and non-clinically.

In the U.S., pharmacists are essential members of interprofessional care teams, not only dispensing medications but also optimizing therapies, improving safety, and enhancing focus on patient-centered drug management (36). Interprofessional healthcare teams also help improve therapeutic adherence among chronic disease patients, which in turn enhances clinical outcomes, reduces adverse effects, and lowers treatment costs (37).

Patients with chronic conditions treated by interprofessional teams often achieve better therapeutic outcomes and report higher satisfaction compared to those treated solely by individual healthcare professionals.

## **DISCUSSION**

This review indicates that pharmacists play a crucial role in interprofessional care teams by ensuring the accuracy of drug therapy, which can reduce hospital stays and overall healthcare costs.

Interprofessional care teams rely on various collaborative factors, including trust and a willingness to cooperate among members. Effective patient-centered care requires that these teams, composed of diverse healthcare professionals, identify and implement the necessary aspects of collaboration. In these teams, the leaders define the goals, which initiate the action plan for patient care. Following implementation, ongoing evaluation is needed to ensure effectiveness. A competent interprofessional care team, as its professional skills advance, will continue to enhance patient care and team professionalism (38).

For interprofessional healthcare teams, five dimensions—partnership, coordination, cooperation, decision-making, and therapeutic outcomes—are essential for a cohesive sense of purpose. These dimensions reflect the performance of the team in treating patients with chronic conditions, with each dimension supporting and strengthening the others.

Coordination in interprofessional care involves aligning actions so that implemented rules and activities do not conflict. Communication is another foundational component for effective teamwork. According to relational coordination theory, for effective coordination, team members must share knowledge and understanding while building relationships based on mutual goals and respect (39). The shared goal within interprofessional healthcare teams is to improve patient health. The diverse team members must maintain high levels of mutual respect and trust, sharing patient information transparently to ensure no details are overlooked in care. Studies have demonstrated that effective collaboration between nurses and doctors can improve care quality, reduce patient morbidity and mortality, and increase patient satisfaction. For healthcare personnel, such collaboration can also enhance job satisfaction and retention. Although coordination and collaboration share common aspects, including joint accountability and role clarity, coordination is viewed as less complex and urgent, focusing more on predictable team tasks (40).

Cooperation within an interprofessional healthcare team is a shared effort by several professionals to achieve common objectives. The quality of collaboration in healthcare directly affects patient outcomes and should therefore be a key area of focus.

A patient's lack of confidence or skill in joint decision-making can sometimes hinder this process. However, effective communication of disease and treatment information across various healthcare providers can assist patients in this regard. Healthcare providers play a facilitating role in decision-making, and general practitioners and community pharmacists should have sufficient mental health training to support this process. Successful joint decision-making is often achieved by information-sharing between healthcare providers, emphasizing continuity across care settings (41).

Improving interprofessional team practices is a valuable approach to enhancing care quality, reducing costs, and achieving better therapeutic outcomes for patients. One reason past efforts to enhance interprofessional practice may have fallen short is the absence of a unified framework for teamwork. Understanding the complex functions of interprofessional teams can guide the development of targeted interventions for improved outcomes (42).

This review has certain limitations. First, while numerous factors influence interprofessional collaboration, this study focused on five key dimensions reported to have direct relevance to healthcare collaboration. Second, due to limited research on pharmacists' specific roles within interprofessional teams, this study is a literature review rather than a systematic review, providing a qualitative summary of pharmacists' contributions.

## CONCLUSION

In conclusion, despite some limitations, this review underscores the significant role that pharmacists play within interprofessional care teams, providing clinical services to help manage chronic diseases. Pharmacists contribute to teamwork through coordinating care, building effective partnerships, making goal-oriented decisions, and enhancing therapeutic outcomes for patients.

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