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Synergistic Care in General Medicine: Leveraging the Nurse-Pharmacist Partnership to Improve Safety, Efficacy, and Outcomes

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Abstract:

Background: Coordinated care models integrating nursing and pharmacy services are increasingly prominent in general medicine to meet the rising challenges of managing chronic diseases, medication adherence, and transitions in care. Such models leverage the synergistic knowledge base of nurses and pharmacists to maximize patient outcomes and health care effectiveness. **Aim:** This systematic review synthesizes existing evidence on nurse-pharmacist collaboration models and their structure, execution, outcomes, and challenges in the broader medicine departments. **Methods:** A scoping review was conducted through PubMed, CINAHL, Scopus, and ProQuest, and peer-reviewed articles between the years 2015 to 2025. Keywords "coordinated care," "nurse-pharmacist collaboration," and "general medicine" were utilized. Inclusion criteria were empirical studies and systematic reviews that talked about nursing-pharmacy integration and thematic analysis. **Results:** Results highlight four collaboration models—team-based care, parallel processes, case management, and integrated care—with improved medication adherence (20% hypertension improvement), reduced hospital readmissions (15% for heart failure), improved control of chronic conditions (1.2% decrease in HbA1c), and improved patient satisfaction (25% CAHPS score improvement). The impediments are fragmentation, training, and interoperability. **Conclusions:** Nurse-pharmacist collaboration significantly enhances patient-centered care, but system barriers must be overcome through standardized education, compatible technologies, and policies to realize maximum benefits.

Keywords: Coordinated care, nurse-pharmacist collaboration, general medicine, chronic disease management, medication adherence.

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Introduction

Coordinated care models focus on aligning healthcare delivery among multiple providers to deliver patient-centered, efficient, and safe care to address the challenges of modern healthcare systems (Murray et al., 2015). In the general area of medicine, patients often have complicated chronic illnesses, such as diabetes, hypertension, and heart failure, which need seamless coordination of services to obtain maximum outcomes. Interprofessional care by nursing and pharmacy has emerged as a main strategy for managing significant areas of care, including medication management, transitions of care, and patient education (Dilles et al., 2021). Nurses, due to the patient-focused philosophy, and pharmacists, due to their knowledge being specific to pharmacotherapy, are a cooperative duo that bridges gaps in the broken paradigms of healthcare to ultimately improve patient outcomes and reduce healthcare costs (Alruqi, 2025). This article offers a closer look at such coordinated care models, their architecture, implementation plans, measurable outcomes, and inherent challenges, with particular emphasis on the core position of nurse-pharmacist partnerships in general medicine practices.

Growing rates of chronic diseases and an aging population have increased the urgency for coordinated care models that can address polypharmacy, enable continuity of care, and enable patient activation (Chwastiak et al., 2017; Hohmann et al., 2020). Nurses and pharmacists, in their role as front-line health practitioners, are best suited to deal with these challenges under interprofessionalism. With collaboration, their collective efforts ensure whole-person care plans, improved medication adherence, and reduced adverse events, all of which are a necessity in general medicine where patients often live with complex treatment regimens (Dilles et al., 2021). This review synthesizes current evidence to investigate how such clinicians collaborate, the models that inform their collaboration, and the problems they face, and provides a foundation for enhancing integrated care in clinical practice.

Methodology

This scoping review follows the framework provided by Arksey and O'Malley (2005) and later expanded by O’Brien et al. (2016). A concerted search was undertaken in PubMed, CINAHL, Scopus, and ProQuest for peer-reviewed, 2015-2025 publications that utilized the keywords "coordinated care," "nurse-pharmacist collaboration," "general medicine," and "interprofessional care." The inclusion criteria involved empirical studies, systematic reviews, and case studies that addressed nursing and pharmacy integration in primary or general medicine. Exclusion criteria were non-English language studies, non-peer-reviewed publications, and non-general medicine studies. Thematic analysis was conducted through deductive and inductive approaches, with results validated through expert consultation (Alruqi, 2025).

The Nurses' and Pharmacists' Role in Coordinated Care

Nurses' Contributions

Nurses are the foundation of care coordination for primary care and general medicine practice, leveraging their skills in patient assessment, care planning, and interprofessional communication (Karam et al., 2021). Their role encompasses a variety of responsibilities, ranging from conducting thorough health assessments to determining physical, psychological, and social requirements upon which they develop individualized care plans. Nurses are usually the initial point of contact for patients, coordinating with GPs, specialists, and other practitioners to ensure continuity of care (Karam et al.,

2023). This is particularly critical for those with complicated illnesses, such as Alzheimer's disease, as nurses facilitate care transitions, monitor follow-up appointments, and provide home-based care to support patients and families (Karam et al., 2023).

Nurses are patient navigators and guide patients through the healthcare system in order to reduce fragmentation and prevent gaps in care. For instance, in the management of repeat users of healthcare services—high-emergency-service-utilization patients—nurses employ care optimization strategies, such as scheduling them for repeated follow-ups and coordinating multidisciplinary treatments (Karam et al., 2023). Their ability to build trust with patients enhances engagement and adherence to treatment plans, which makes them an essential element of coordinated care models (Lemetti et al., 2021). Also, nurses enable patient education, which allows individuals to manage their conditions through changes in their lifestyle and self-care practices, which are critical to long-term health outcomes (Hinneburg et al., 2023).

Pharmacy Contributions

Pharmacists offer specialized expertise in drug management, ensuring the effective and safe use of pharmacotherapies in mainstream medicine settings (Abu Haddash, 2025). They include undertaking medication reviews to identify potential drug interactions, optimization of therapeutic regimens, and medication reconciliation upon transitions of care, such as hospital discharge or transfer of care to primary care (Hohmann et al., 2020). Pharmacists are directly involved in controlling polypharmacy, also common among patients with multiple chronic diseases, through regimen simplification and dosing adjustment for minimizing potential adverse effects (Abu Haddash, 2025).

Beyond clinical roles, pharmacists take on administrative tasks that enable care coordination, such as processing prior authorizations and collaborating with insurance companies to provide timely access to medications (Alhabeeb et al., 2025). They also engage in educating patients on the use of medications, side effects, and how to remain adherent, which is a key factor in chronic disease management, where non-adherence leads to adverse consequences (Hohmann et al., 2020). Through tracking therapeutic outcomes and collaborating with other professionals, pharmacists ensure that medications integrate into patients' care plans as a whole, assisting in improved health outcomes and reduced costs (Kastner et al., 2018).

Synergistic Roles

Pharmacists and nurses share complementary skill sets that they use together to produce a synergistic relationship that enhances patient care. Nurses prioritize holistic care, responding to the patients' clinical, psychosocial, and emotional needs, whereas pharmacists focus on precise pharmacological expertise, optimizing the safety and effectiveness of drugs (Alhabeeb et al., 2025). This interaction is maximized in models promoting team-based and shared decision-making care, where both professionals are engaged in creating and implementing patient-focused care plans (Lemetti et al., 2017).

In the care of chronic conditions, nurses assess the overall health condition of patients and plan for multidisciplinary care, and pharmacists individualize drug regimens to address therapeutic targets (Hohmann et al., 2020). This is observed with medication adherence interventions, where nurses provide ongoing support to patients and pharmacists deliver comprehensive counseling on medication use (Damiaens et al., 2021). Through a combination of

their expertise, nurses and pharmacists solve both the clinical and practical issues of care, and this results in improved patient outcomes, such as enhanced control of chronic diseases and reduced hospital readmissions (Joo & Liu, 2017).

Models of Nurse-Pharmacist Collaboration

Recent literature denotes a number of nurse-pharmacist collaborative models, each having been developed to meet distinct patient requirements and healthcare settings. The models vary by organization, level of integration, and application of technology, but all aim at enhancing care coordination and patient outcomes. Table 1 and Figure 1 provide an exhaustive presentation of the models, their definitions, key features, and real-life examples.

Table 1. A detailed summary of nurse-pharmacist collaborative models.

Model	Description	Key Features	Examples
Team-Based Care	Multidisciplinary teams, including nurses, pharmacists, physicians, and other providers, collaborate closely to deliver comprehensive, patient-centered care.	Regular interdisciplinary meetings, shared care plans, standardized communication protocols, and a focus on holistic patient outcomes.	Guided Care Model (Johns Hopkins), where nurses conduct initial assessments and pharmacists ensure medication safety (Damiaens et al., 2021).
Parallel Processes	Nurses and pharmacists work independently but align their efforts through shared electronic health records (EHRs) or other communication tools.	Indirect collaboration, reliance on standardized protocols, and integration of EHRs to share patient information seamlessly.	Telehealth settings, where pharmacists review medications remotely while nurses manage patient follow-ups (Chong et al., 2025).
Case Management	Nurse-led coordination with pharmacist support, targeting high-risk patients with complex needs.	Patient navigation, medication reconciliation, home visits, and tailored interventions to reduce healthcare utilization.	V1SAGES Program, focusing on frequent healthcare users with nurse-led care plans and pharmacist-led medication management (Karam et al., 2023).
Integrated Care	Nurses and pharmacists share responsibilities within a unified care plan, often co-located in the same facility.	Co-located services, joint decision-making, patient education, and integrated workflows to streamline care delivery.	Family Medicine Groups (FMGs) in Quebec, where nurses and pharmacists collaborate in primary care settings (Karam et al., 2023).

Figure 1. The four nurse-pharmacist collaboration models.

Team-Based Care

The Team-Based Care model is oriented around regular, organized collaboration among nurses, doctors, pharmacists, and other health professionals to craft and implement comprehensive care plans. This model is readily exemplified by the Guided Care Model developed by Johns Hopkins, where nurses conduct initial patient assessments to identify needs and manage care, and where pharmacists are responsible for medication safety and optimization (McGilton et al., 2023). Regular team meetings and coordinated care plans among providers ensure consistency among providers, upholding a patient-centered culture. Evidence confirms this model enhances patients' outcomes significantly, including decreasing hospital readmission by 15% for chronic illnesses such as heart failure (Joo & Liu, 2017). The effectiveness of the model is that it emphasizes direct communication and joint responsibility, which facilitates care continuity and patient satisfaction (Hinneburg et al., 2023).

Parallel Processes

The Parallel Processes model allows nurses and pharmacists to practice independently yet coordinate their work using shared tools, such as EHRs. The model is particularly prevalent in telehealth settings, where spontaneous communication is impaired but coordinated care is achieved via standardized guidelines and electronic media (McGilton et al., 2023). For example, pharmacists can remotely review patients' lists of medications, while nurses perform remote follow-ups with patients, both communicating via updates on EHRs (Chen et al., 2024). It is lighter in terms of administration and has the option for flexibility in settings that are resource-scarce, but without the face-to-face communication and real-time collaboration of team-based models, it can be less effective in complex cases (Chen et al., 2024).

Case Management

The Case Management model focuses on nurse coordination, with focused medication support by pharmacists for high-risk patients such as those with increased ED visit frequency or complex chronic diseases (Karam et al., 2023). Nurses as care coordinators coordinate transitions among sites of care, arrange follow-ups, and encourage patient adherence to treatment regimens. Pharmacists subsequently follow up by performing medication reconciliation, preventing polypharmacy, and counseling (Adams et al., 2024). The V1SAGES Program, for example, aims at high-need frequent users of health care, with substantial ED visit reductions through nurse-pharmacist collaboration (Flowers & Shade, 2019). The model is best suited for patients who need high, individualized intensity

because it marries the holistic orientation of nursing with pharmacists' pharmacological experience.

Integrated Care

Integrated Care models involve co-located nurses and pharmacists working under one integrated care model, often in primary care settings like Quebec's Family Medicine Groups (FMGs) (Karam et al., 2023). Under these models, the two work together with shared responsibilities that involve developing care plans, conducting patient education, and coming up with joint decisions on treatment adjustments. This colocated collaboration facilitates open communication and timely response to patient need, improving chronic disease management, for instance, improved blood glucose control in diabetic patients (Adams et al., 2024). The strength of the model lies in its uninterrupted workflows and colocated services, reducing delay and increasing patient activation (Simpson et al., 2022).

Outcomes of Nurse-Pharmacist Collaboration

The partnership between nurses and pharmacists in integrated care structures produces high returns, enhancing patient outcomes, health care effectiveness, and system performance. The impacts are highest in general medicine, where chronic patients require complex, multidisciplinary care. Pharmacy and nursing integration aims at critical areas in care provision, such as medication management, transitional care, and patient activation, leading to measurable gains in health outcomes and patient satisfaction. Table 2 summarizes the primary outcomes, such as enhanced medication adherence, reduced hospital readmission, better chronic disease management, and enhanced patient satisfaction, and is informed by empirical evidence and current research.

Table 2. The primary outcomes of nurse-pharmacist collaboration.

Outcome	Description	Evidence	References
Improved Medication Adherence	Collaborative education and medication reviews enhance patient adherence to prescribed regimens, particularly for chronic conditions.	20% increase in adherence rates for hypertension patients in collaborative care settings.	Hohman et al., 2020; Chong et al., 2025
Reduced Hospital Readmissions	Coordinated care plans ensure seamless transitions and follow-up care, reducing readmissions for chronic conditions.	15% reduction in 30-day readmissions for heart failure patients in nurse-pharmacist collaborative models.	Joo & Liu, 2017; Kastner et al., 2018
Enhanced Chronic Disease Management	Joint management of chronic diseases, such as diabetes and hypertension, leads to significant clinical improvements.	HbA1c reduction by 1.2% in diabetic patients under collaborative care.	Cangelosi et al., 2022; Bouton et al., 2023
Increased Patient Satisfaction	Patient-centered communication and coordinated interventions improve satisfaction scores.	25% improvement in CAHPS scores in settings with strong nurse-pharmacist collaboration.	Simpson et al., 2022

Enhanced Medication Adherence

Compliance with medication is a key issue in the care of chronic diseases since non-adherence to medication will eventually lead to disease deterioration, additional healthcare costs, and unnecessary hospitalizations. Multidisciplinary approaches between nurses and pharmacists have proven greatly in addressing this issue, particularly in hypertension and diabetes management (Hohmann et al., 2020). Pharmacists aid through a detailed review of medication, identifying drug interactions, simplifying regimens, and advising patients with personalized information about the appropriate use of medicines and potential side effects. Nurses expand on this by pursuing subsequent visits, reminding teaching, and reducing barriers to adherence such as expense or failure to comprehend instructions (McGilton et al., 2023). For instance, in shared care settings, medication reconciliation by the pharmacist followed by follow-up by the nurse has been found to enhance adherence to medication up to 20% in hypertensive patients, largely reducing the risk of cardiovascular events (Hohmann et al., 2020). Such collaboration is a surefire way to not only make patients understand their drug regimens but also empower them to adhere to them, leading to enhanced health outcomes and ease of pressure on healthcare systems.

Reduced Hospital Readmissions

Hospital readmissions, particularly within 30 days of discharge from the hospital, are a source of concern for patients suffering from chronic disease and contribute to increased healthcare costs and decreased quality of life. Care models integrating nursing and pharmacy services into coordinated care have proven to be effective in reducing readmission by providing well-coordinated transitions between settings and robust follow-up care (Joo & Liu, 2017). For example, in the Guided Care model, follow-ups post-discharge are scheduled by nurses to facilitate compliance with care plans, while medication reconciliation is performed by pharmacists to prevent errors and optimize therapies (White et al., 2022). Such team collaboration has led to a 15% reduction in 30-day readmission of heart failure patients, as seen in different studies (Joo & Liu, 2017; Kastner et al., 2018). Through filling gaps in transitions of care—e.g., incomplete lists of medicines or not scheduling follow-up appointments—nurse-pharmacist collaborations ensure continuity of care, reducing complications that necessitate readmission to the hospital. Such an outcome underscores the value of interprofessional collaboration in enhancing patient safety and system efficiency.

Enhanced Management of Chronic Conditions

Chronic conditions, such as diabetes, hypertension, and cardiovascular disease, must be managed constantly in order to prevent complications and improve quality of life. Interdisciplinary collaboration between nurses and pharmacists has been determined to play an important role in managing these conditions by means of a combined approach that unites clinical practice, drug optimization, and patient education (Cangelosi et al., 2022). Nurses assess the overall well-being of patients, monitor symptoms, and coordinate multimodal care, while pharmacists optimize drug regimens to achieve therapeutic goals, such as optimal blood pressure or blood glucose (Khan et al., 2022). For instance, a fall of 1.2% in HbA1c levels in diabetic patients under collaborative care has been indicated by research, which shows improved glycemic control and reduced complications (Cangelosi et al., 2022). This is experienced through the synergistic action of nurses, who possess holistic care, and pharmacists, who possess pharmacological effectiveness, to give better

disease control and reduced side effects (Khan et al., 2022). These improvements emphasize the importance of collaborative care models in reconfiguring the management of chronic diseases in general medicine.

Increased Patient Satisfaction

Patient satisfaction is one of the important measures of quality of care in healthcare, which shows the effectiveness of communication, accessibility, and patient-centered care. Collaboration of nurses and pharmacists improves satisfaction through patient-centered communication and coordinated treatments to individual needs (Simpson et al., 2022). Nurses build trust through compassionate communication and ongoing support, with the provision of explicit, unambiguous information about medications by pharmacists, allowing patients to become more engaged in their care (White et al., 2022). Such collaboration has provided a 25% increase in Consumer Assessment of Healthcare Providers and Systems (CAHPS) scores in regions with proper nurse-pharmacist collaboration, with patients citing enhanced informedness and support (Simpson et al., 2022). With the integration of clinical and psychosocial intervention, these kinds of teams ensure a more fulfilling health care experience that leads to enhanced adherence and engagement with the treatment plan, further enhancing the benefits of collaborative care.

Challenges and Barriers

Although the advantageous roles of nurse-pharmacist collaboration are apparent, numerous impediments exist to the widespread implementation and success of these models of care in general medicine. These obstacles, which have systemic, technological, and professional roots, need to be solved in order to optimize the potential of collaborative care.

Interoperability Issues

Effective collaboration is based on seamless sharing of information, yet fragmented electronic health record (EHR) systems are destined to stifle this process, leading to inefficiencies and delays in care coordination (Chen et al., 2024). For example, EHR platform incompatibility can deprive pharmacists of real-time access to nursing assessments or delay medication reconciliation, exposing patients to potential errors (Pellet et al., 2023). These interoperability issues are most problematic within multi-provider systems or between separate healthcare organizations, where a lack of standardized data exchange protocols creates communication deficiencies. These issues must be addressed through investment in interoperable EHR systems that enable real-time, secure exchange of patient information among the entire care team.

Training Gaps

Nurse-pharmacist collaboration is only as successful as professionals' ability to work together seamlessly, and few professional degrees adequately prepare nurses and pharmacists for interprofessional practice (Adams et al., 2024). Interprofessional education (IPE) is critical to encourage collaborative behaviors, such as shared decision-making and effective communication, but it is weakly executed across institutions (White et al., 2022). Without standardized IPE, nurses and pharmacists might lack the ability to manage collaborative processes, which can limit the advantage of care coordination models. Adding more IPE programs and incorporating them into professional education curricula are key steps to fill these gaps and foster collaboration.

Disjointed Healthcare Systems

Disjointed healthcare systems with fragmented protocols, varying regional practices, and a lack of standardization are strong disincentives to nurse-pharmacist collaboration (Peterson et al., 2019). These inconsistencies can lead to misplaced care plans, conflicting priorities, and reduced coordination, particularly in areas with heterogeneous healthcare infrastructures (Simpson et al., 2022). For example, differences in medication management guidelines across primary and hospital care can compromise transitions, blurring the benefits of teamwork. Developing uniform, evidence-based policies and encouraging regional cooperation are crucial to overcoming these system-level barriers and providing homogeneous care.

Workload and Resource Constraints

Heavy workloads and limited resources overwhelm nurse-pharmacist teams, making limited time for teamwork and limiting the scalability of coordinated care models (Kwame & Petrucka, 2021). Both nurses and pharmacists have numerous tasks to perform at the same time, with limited space for interdisciplinary meetings or follow-ups on patients. Furthermore, inadequate remuneration systems fail to compensate for teamwork, discouraging practice engagement in team-based care (Geese & Schmitt, 2023). Overcoming such limitations necessitates strategic reallocation of resources, i.e., enhanced recruitment of personnel or using workload management tools, and policy changes to financially reward interprofessional collaboration.

Technological Facilitators

Digital technologies play a crucial role in enhancing nurse-pharmacist collaboration by supporting communication and optimizing access to patients' information. Electronic health records (EHRs) enable real-time data transfer, allowing nurses and pharmacists to effectively coordinate interventions (Chen et al., 2024). For example, integration of EHR ensures that pharmacists can see nursing assessments to inform changes in medication, and nurses can see pharmacist recommendations to facilitate patient education. Telehealth systems also promote teamwork, particularly in remote or underserved areas, by enabling remote consultation and virtual care planning (Chen et al., 2024). New technologies in AI possess the capability to simplify processes, such as automating medication reconciliation or predicting patient requirements, but their application is presently being restricted by cost and implementation challenges (Chen et al., 2024). Continued investment in these technology innovations is required in order to break through barriers and realize the optimal efficiency of care coordination models.

Policy and Practice Implications

To realize the full potential of nurse-pharmacists' collaboration, health systems need to implement clear policy and practice reforms. Firstly, interprofessional education (IPE) programs need to be standardized to equip nurses and pharmacists with appropriate skills to work in collaboration with each other, with emphasis on competencies like shared decision-making and communication (White et al., 2022). First, investment in interoperable electronic health records and artificial intelligence-based platforms can coordinate and eliminate inefficiencies for seamless sharing of information among providers (Chen et al., 2024). Second, reimbursement systems that financially reward team-based care can induce participation and support ongoing collaborative work (Simpson & Reid, 2019). Third, putting an end to systemic fragmentation through standardized protocols and regional

coordination will make consistent and scalable coordinated care models a reality (Santos et al., 2022). These changes require coordinated action from policymakers, health administrators, and education systems to establish an enabling environment for interprofessional care.

Future Research Directions

More research is needed to refine and extend nurse-pharmacist collaboration models into general medicine. First, longitudinal studies should assess the long-term outcomes of such models in various settings, such as urban compared to rural settings, to ascertain their generalizability and feasibility (Kastner et al., 2018). Second, studying the capability of AI and other technologies in augmenting coordination is likely to provide valuable insights into maximizing workflow and improving patient outcomes (Chen et al., 2024). Third, studying the cost-effectiveness of different types of collaboration will help policymakers budget resources wisely and justify investments in coordinated care (Joo & Liu, 2017). Finally, assessing the impact of interprofessional education (IPE) to enhance collaboration effectiveness can inform the construction of training programs that prepare nurses and pharmacists to work together more effectively as a team (Jenkins-Weintaub et al., 2023). Such research priorities will direct evidence-based interventions to facilitate coordinated care.

Conclusion

Coordinated care models in general medicine with nursing and pharmacy services offer a strong foundation for enhancing patient outcomes, drug adherence, and the efficiency of healthcare. Models such as team-based care, parallel processes, case management, and integrated care leverage the strengths of nurses and pharmacists together to address the complexities of patients with chronic illness. The models have exhibited great advantages, including improved adherence, reduced hospital readmissions, better control of chronic disease, and enhanced patient satisfaction. However, challenges such as interoperability, deficits in training, dysfunctional systems, and limits of resources must be addressed to achieve their full capacities. By standardizing training, enhancing technology infrastructure, implementing supportive policies, and prioritizing future research, healthcare systems can cement nurse-pharmacist collaboration, creating a more integrated, patient-focused system of care for general medicine. This review provides a firm foundation for practice, policy, and research stakeholders to continue these endeavors and to transform the provision of healthcare.

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