

THE ROLE OF PHARMACISTS IN PATIENT SAFETY AND MEDICATION MANAGEMENT

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Abstract

Pharmacists are increasingly integral members of the team-based approach to patient care, providing counsel on medication use to both patients and providers and playing a major role in promoting patient safety associated with medication use processes. We describe three ongoing research programs that have implications for patient and medication safety in the community and hospital settings. The Health Outcomes Advancement Research study in rural Indiana is tracking health self-management strategies for patients with chronic obstructive pulmonary disease and focusing on the way community pharmacies support medication and chronic disease self-management, with the ultimate goal of improving adherence, resulting in better outcomes and fewer exacerbated episodes. The PharmIST study uses remote patient monitoring and telehealth services, in collaboration with a patient-centered medical home.

Key Findings: Pharmacists work with patients and providers in multiple settings to ensure that patients' medication regimens are safe and optimally effective. Pharmacy practice is constantly changing in its response to the technology that provides medications and the knowledge necessary to use them safely and effectively. Pharmacists' reach has increased globally and now encompasses a purposeful expansion into more clinical roles in outpatient and hospital-based settings. Over the last 20 years, the epidemic of chronic diseases has been met by these and other changes in the American healthcare system to meet the need for better patient self-management. Public-private sector partnerships remain central to the success of federally legislated programs, creating a safety net for the uninsured and underinsured, as well as for successful interventions in patient treatment and care management, implementing evidence-based process measures facilitated by health information technology. The classic management of necessary medications from a pharmacist's perspective outlined here remains a fundamental core process in the healthcare delivery system. The management of various drug-related problems, as well as the promotion of

medication safety, wellness, and adherence, is part of pharmacists' many contributions to reducing healthcare costs.

Keywords

pharmacy, pharmacist, medication, patient safety, adverse drug event, medication errors, community pharmacy

1. Introduction

Patient safety, along with high standard management, is a key foundation of the delivery of high standards of care. Various reports highlight that while cultural, societal, and political measures of improvement can be made, so too can improvements in the skill set of medication management and the systems in place within both primary and secondary care. Medication management is an essential part of the holistic approach to care, which crosses the boundaries of multiple health care professions. Although it goes beyond the realm of the general medical practitioner, early integration, through the concept of medicines optimization, may not only allow individuals to better manage their medical conditions but also potentially reduce the financial burden on the government. By integrating the role and responsibilities of pharmacists into the everyday care of patients, the financial rewards of such involvement are now widely being realized. (Morton & Thurman, 2023)(Ratan et al.2021)

1.1. Background and Importance

Pharmacists play a critical role in addressing medication errors and improving patient safety. Serving on interdisciplinary teams, they contribute to a culture of safety, manage drug-drug interactions, assure medication efficacy, assist patients in managing chronic illness, solve problems with prescription benefits, and contribute to solutions to complex issues in computer order entry. While these professional activities are critical, overcoming the remuneration hurdle and assuring undergraduate and postgraduate education of sufficient duration while maintaining consistency in admission standards, cost, faculty, laboratory, and practice site resources across the accreditation spectrum are likely to require novel solutions and guarantees of excellence if the training period expands. As demand for the services of pharmacists grows, it is essential that they work with other health professionals to assure the highest standards of care. (Gillani et al.2021)

2. Pharmacists' Responsibilities in Patient Safety

In healthcare, the patient's welfare is the top priority, and patient safety is crucial in every aspect because inappropriate intervention may lead to fatal outcomes. Many medical disagreements include contact with patients undergoing a variety of conditions requiring medication, diagnosis, and management. Both medication and disease management are essential aspects of chronic disease. Often, undesirable drug-related problems are detected, which can lead to fatal and frequent effects due to overprescription, misuse, and drug interactions. (Burke et al., 2022)

Pharmacists are a crucial member of the healthcare team who can identify, prevent, and remedy any potential drug-related problems. The pharmacists' added advantage to the healthcare team, along with their knowledge of prescribing and dosing medications, is their approach to procedures, medication counseling, and patient outcomes. The aim of this study is to recognize the possibilities of pharmacists on the healthcare team, their impact on chronic diseases, their positive value on

patient outcome improvement, and to quantify their impact on patient care, especially in patient safety. (Ylä-Rautio et al.2020)

2.1. Medication Reconciliation

The aim of medication reconciliation is to avoid medication errors due to discrepancies in the order of the medication, the administration, recording, and monitoring of the medication on or around the time that the patient is under the care of a number of health care providers or transferring between different settings. The pharmacist may reconcile discrepancies that he or she identifies in the different settings and at different transition points. The pharmacist can provide a more comprehensive medication reconciliation review than other healthcare providers. When pharmacists take over responsibility for the medication reconciliation process, they also contribute to enhanced patient safety outcomes. During medication reconciliation processes, pharmacists' contributions have been noted through participation in ward rounds, medication histories reviews, and resolving discharge medication discrepancies. (Chiewchantanakit et al.2020)

3. Pharmacists' Role in Medication Management

In most healthcare systems, the role of the pharmacist is to be attentive to the pharmaceutical care of the patient and to offer support to healthcare professionals, thus ensuring optimal results in drug therapy. We find this practice in this profession due to its broad knowledge of drugs and expertise in health management. Currently, the reality of the profession is broad, with the most varied professional practices contributing to the role of the pharmacist in patient safety and drug management. The professional practice of a pharmacist broadens with the increase in life expectancy and the rise in chronic diseases. The main characteristics of the role of the pharmacist as a provider of pharmaceutical care are the coordination of the drug therapy process, the assessment of the patient's drug reactions, education, and patient counseling in the proper use of medication, working in an interdisciplinary team to optimize treatment, contributing to the overall efficacy of treatment and safety, improving the quality of life of the patient, and reducing the cost of healthcare as a whole, particularly the cost related to drug therapy. Pharmacists have great potential to promote patient safety because of their knowledge of medication and their proximity to patients, characterized especially by their counseling role and participation in drug therapy. (Bridgeman & Wilken, 2021)

3.1. Dispensing and Labeling

Once a prescription is issued, reception, assessment, patient counseling, and drug supply proceed to the process of dispensing. Drug dispensing must be a conscientious process, which requires attention in selecting, transferring, packaging, labeling, and counseling. The pharmacists must also reassess every time they pass through a patient to check for any potential adverse effects or the possibility of a therapeutic solution. This check is especially important in self-medication practices. The use of an electronic prescribing system would facilitate the dispensing process and minimize the error rate. A pharmacist uses this technique to store images of the labels of prescribed medications and photographs of the actual medications. If the label of the drug listed in the medications the patient receives has its own barcode, the system can verify that the correct medications have been pulled. When the pharmacist has the list completed, the software requires

the pharmacist to compare the images displayed on the screen with the actual medications laid out in front of him to ensure that correct drug-for-label matching takes place. (Richert and Carter 2024)

4. Collaboration with Other Healthcare Professionals

As is the case with other healthcare professionals, contributing to well-being is a mutual goal for pharmacists. In working to ensure this, pharmacists can collaborate with other healthcare professionals such as physicians, nursing professionals, and diagnostic radiology technologists to utilize the specialized knowledge and expertise each holds. Effective collaboration among healthcare professionals has been shown to improve patient safety and the appropriateness of medical care in the healthcare system. Although pharmacists contribute to the establishment of an appropriate medication therapy, non-pharmacists who do not have specialized pharmaceutical education or knowledge cannot fully appreciate the role of the pharmacist. (Burgener, 2020)

Patients do not confront health issues in isolation. It is now common for multiple health professionals to be part of a patient's healthcare in modern medicine. Thus, specialists of different disciplines closely collaborate with each other. However, for collaboration to work, mutual understanding between professionals is an essential requisite. This can be accomplished by each displaying knowledge and respect towards the other's profession and holding open discussions. Efforts made by each specialist to acquire additional knowledge about the other's profession could provide an effective pathway to enhance collaboration. Furthermore, this project examines the significant aspects of interactions between radiological technologists and pharmacists. We hope that this will lead to a more accurate and complete understanding of each of pharmacists' roles in a multi-disciplinary team of professionals. (Wei et al. 2020)

5. Technological Innovations and Tools in Medication Management

E-prescribing is becoming mandatory throughout the world. In addition, in countries where the use of electronic health registers is implemented, the task of documenting and coordinating treatments is easy. Five of the most widely used CPOE systems in the United States are Epic, Cerner, Eclipsys, McKesson, and Siemens. Very importantly, CPOE systems should align with the electronic chart of the patient. All prescriptions, over-the-counter drugs, and dietary supplements and vitamins should be included in the electronic patient chart. This way, clinicians can easily identify potential adverse reactions to some already prescribed substances or interactions between new and old prescribed drugs. Computer alerts on clinical decision support that identify drug alerts should also be embedded in an integrated system. (Farghali & Borycki, 2024)

In terms of medication management, there is a wide family of Medication Management Information Systems or Medication Management Knowledge Management Systems. These tools search for relevant information about drugs and any potential adverse consequences of consuming certain medicines. This information goes far beyond the Patient Package Insert and includes pharmacokinetic facts like the minimum and maximum blood concentrations of digoxin in a certain population. The objective of these tools is to reduce the number of negative therapeutic outcomes. The ultimate objective of the health staff is to enhance the patient's quality of life. (Wager et al., 2021)

6. Discussion

Pharmacists' role in patient safety and medication management is multidimensional and depends on different aspects. As a result, these roles are not always obvious, and some pharmacists may not perceive how their jobs contribute to the clinical effectiveness and safety of their patients' medications. Our study and others suggest that such misconceptions can affect the performance of pharmacists, such as insufficient reporting of adverse drug events or the implementation of safety systems designed to reduce and eliminate mistakes. In this discussion, both the implications of our study and those for the controversies raised regarding the roles of pharmacists are presented.

6.1. Implications of the Study This study provides important input to consider when developing interventions that promote pharmacist engagement in clinical activities in the community pharmacy setting. The findings of the Focus S group, along with our hypothesis that time constraints and compensation for pharmacists are determining factors for others, highlight that pharmacy managers play a crucial role in generating the working conditions for pharmacists to interact with patients and with other healthcare professionals. However, it is important to highlight that all of the informants of the study, including the pharmacists who contributed to the validation of the interview guide, agreed that pharmacy managers are in favor of the pharmacists providing these services because the caregivers perceive that their role is fundamental in providing information to patients about their medications.

7. Conclusion

Pharmacists have roles across the spectrum of healthcare, including within their community, local hospital, general practice and also informatics functions within organizations. In addition, they will be making decisions and giving advice to patients. These can be considered as an informal step toward independent prescribing. In conclusion, considering the increasing role of pharmacists in patient safety and their valuable contributions to the protection of the public in all areas of healthcare, including involvement at the point of patient care, collaboration with other healthcare professionals, proactively monitoring and assessing patient safety incidents, and contributing to the creation of new prevention strategies, it is important for both the pharmacy profession and the public at large to have a clear picture of what this role actually encompasses. Although this review has clearly shown the extended practice of pharmacists, it is pragmatic that more such collaborative efforts, for example, between GPs and community pharmacists, be formally recognized and that pharmacists have a say in areas boasting their clinical services, as visible in the increasing establishment of advanced practice roles in medication optimization. By recognizing the role of pharmacists in patient care processes, medicines management and appropriate use of medicines, there is potential to facilitate timely and appropriate access to care, improve patient satisfaction, minimize patient inconvenience, demonstrate economic contribution, optimize continuum of care, save waiting time and reduce risks of patients.

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