

HEALTH-SYSTEM PHARMACY SERVICES FOR OUTPATIENTS ARE EVOLVING IN SAUDI ARABIA

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Abstract

Ambulatory care pharmacy practice in Saudi Arabia has witnessed significant advancements in recent years, driven by the need to enhance patient care and optimize medication management in outpatient settings. This article provides a comprehensive review of the innovations and best practices implemented at Johns Hopkins Aramco Healthcare (JHAH), a leading healthcare institution in Saudi Arabia. The authors highlight the establishment of pharmacist-led chronic disease management clinics, the adoption of telepharmacy and drive-through pharmacy services during the COVID-19 pandemic, and the implementation of medication home delivery services. Additionally, the article discusses the implementation of pharmacist-led medication therapy management services, the integration of clinical decision support systems and electronic health records, and the active involvement of pharmacists in interprofessional collaborative practice. Continuous professional development and education initiatives are also emphasized to enhance the knowledge and skills of pharmacists in various areas, including medication management, patient counseling, and disease state management. The initiatives described in this article demonstrate JHAH's commitment to patient-centered care, medication safety, and the optimization of medication use, positioning pharmacists as integral members of the healthcare team. The best practices highlighted in this review can serve as a model for other healthcare organizations in Saudi Arabia and the region, fostering the evolution of ambulatory care pharmacy practice and promoting better patient outcomes.

Introduction

The healthcare landscape in Saudi Arabia is undergoing significant transformations, driven by the nation's Vision 2030 and the increasing burden of non-communicable diseases (NCDs) (Chowdhury et al., 2021). As a result, the role of pharmacists and the services they provide are evolving to meet the changing healthcare needs of the population. Outpatient pharmacy services, in particular, are experiencing a paradigm shift, moving from a primarily product-focused model to a patient-centered approach that emphasizes medication therapy management, disease state management, and preventive care (Al-Jedai et al., 2016).

The COVID-19 pandemic has further accelerated the adoption of innovative pharmacy services, such as medication home delivery and drive-through medication pickup (Hussain et al., 2021; Jirjees et al., 2024). These services not only improved medication accessibility during the pandemic but also highlighted the potential for pharmacists to play a more proactive role in patient care beyond the traditional dispensing of medications.

This article explores the evolving landscape of outpatient pharmacy services in Saudi Arabia, highlighting the challenges, opportunities, and best practices that are shaping the future of pharmacy practice in the country.

Outpatient Pharmacy Services: Traditional Approach

Traditionally, outpatient pharmacy services in Saudi Arabia have primarily focused on medication dispensing and basic patient counseling (Al-Jedai et al., 2016). Pharmacists in outpatient settings, such as community pharmacies and ambulatory care clinics, have been responsible for ensuring the accurate dispensing of prescribed medications, providing basic information about dosing and potential side effects, and addressing patients' questions related to their medications.

While this approach has been effective in ensuring medication access and basic education, it falls short in addressing the complex medication-related needs of patients, particularly those with chronic conditions or requiring specialized care (Garjón Parra & Sanz Álvarez, 2023). Additionally, the traditional model places

pharmacists in a reactive role, responding to patients' immediate needs rather than proactively managing their medication therapy and optimizing health outcomes.

Challenges and Opportunities

As the Saudi healthcare system transitions towards a more patient-centered and value-based model, outpatient pharmacy services face several challenges and opportunities:

1. **Increasing Burden of Non-Communicable Diseases (NCDs)** Saudi Arabia, like many countries globally, is experiencing a rising prevalence of NCDs, such as diabetes, cardiovascular diseases, and cancers (Chowdhury et al., 2021). The management of these chronic conditions often requires complex medication regimens, close monitoring, and ongoing patient education (Al-Jedai et al., 2016). Pharmacists, with their expertise in medication therapy management, are well-positioned to play a pivotal role in optimizing medication use, improving adherence, and minimizing adverse drug events for patients with NCDs.
2. **Expanding Scope of Pharmacy Practice** The Saudi healthcare system is recognizing the potential for pharmacists to contribute beyond traditional dispensing roles. Initiatives such as the establishment of pharmacist-led clinics, collaborative practice agreements, and specialized pharmacy services (e.g., anticoagulation clinics, oncology pharmacy services) are expanding the scope of pharmacy practice (Aljuhani et al., 2024; Al Sulaiman et al., 2022; Dib et al., 2014). These expanded roles enable pharmacists to leverage their medication expertise and provide more comprehensive patient care.
3. **Technology Adoption and Digital Health** The rapid adoption of technology and digital health solutions in Saudi Arabia presents both challenges and opportunities for outpatient pharmacy services. Electronic health records (EHRs), clinical decision support systems (CDSS), and telehealth platforms can improve medication safety, enhance patient monitoring, and facilitate remote patient care (Abdullah Alharbi, 2023; Kaushal et al., 2003). However, the effective implementation and integration of these technologies into pharmacy workflows require careful planning, training, and change management strategies.
4. **Patient Empowerment and Self-Management** As patients become more engaged in their healthcare journeys, there is a growing demand for education, self-management support, and shared decision-making (AlOthman et al., 2017; Carini et al., 2021). Pharmacists, with their accessibility and expertise in medication and disease management, are well-positioned to empower patients and facilitate their active involvement in care plans.

Evolving Outpatient Pharmacy Services

To address the challenges and capitalize on the opportunities, outpatient pharmacy services in Saudi Arabia are undergoing a transformative evolution. Several innovative models and best practices are emerging, reshaping the role of pharmacists and the services they provide.

1. **Medication Therapy Management (MTM)** Medication Therapy Management (MTM) is a collaborative, patient-centered approach to optimizing medication use and improving therapeutic outcomes (Katoue & Schwinghammer, 2020). In Saudi Arabia, MTM services are gaining traction, particularly in ambulatory care settings and specialized clinics (Alghadeer et al., 2020; Thorakkattil et al., 2024).

At the core of MTM is a comprehensive medication review, during which pharmacists assess the appropriateness of a patient's medication regimen, identify potential drug therapy problems, and develop an individualized care plan in collaboration with the patient and other healthcare providers. This process empowers pharmacists to actively manage medication therapy, address adherence issues, and minimize medication-related risks.

2. **Disease State Management** Recognizing the growing burden of chronic diseases, many healthcare systems in Saudi Arabia are implementing disease-specific pharmacy services and pharmacist-led clinics (Aljuhani et al., 2024; Al Makahleh et al., 2023). These specialized services leverage pharmacists' expertise in specific therapeutic areas, such as diabetes, hypertension, asthma, and anticoagulation management.

Through these dedicated clinics, pharmacists collaborate with physicians and other healthcare professionals to provide comprehensive disease state management, including medication therapy optimization, patient education, and monitoring of clinical outcomes. This multidisciplinary approach has been shown to improve disease control, reduce complications, and enhance patient satisfaction (Alghadeer et al., 2020; Dib et al., 2014).

3. **Telepharmacy and Medication Home Delivery** The COVID-19 pandemic has accelerated the adoption of telepharmacy and medication home delivery services in Saudi Arabia (Al-Dossari et al., 2024; Al-Zaidan et al., 2021; Asseri et al., 2020; Momattin et al., 2021). These innovative services not only improved medication access during the pandemic but also demonstrated the potential for pharmacists to provide remote patient care and medication management support.

Telepharmacy involves the use of telecommunication technologies to deliver pharmacy services remotely, including medication counseling, refill authorizations, and clinical consultations (Arain et al., 2022). Medication home delivery services, on the other hand, facilitate the safe and efficient delivery of prescribed medications and health products directly to patients' homes (Jirjees et al., 2024).

These services have been particularly beneficial for patients with mobility limitations, those living in remote areas, and those who prefer the convenience of receiving care from home. Additionally, telepharmacy and home delivery services have the potential to improve medication adherence, reduce healthcare utilization, and enhance patient satisfaction (Al-Zaidan et al., 2021; Jirjees et al., 2024).

4. **Pharmacist-Led Clinics and Collaborative Practice Agreements** In response to the growing demand for specialized care and the need to optimize healthcare resources, pharmacist-led clinics and collaborative practice agreements are gaining traction in Saudi Arabia (Aljuhani et al., 2024; Alshaya et al., 2022). These models enable pharmacists to work in close collaboration with physicians and other healthcare providers to provide comprehensive medication management and disease state monitoring.

Pharmacist-led clinics, such as anticoagulation clinics, diabetes clinics, and lipid clinics, allow pharmacists to take a more hands-on approach in managing patients' medication therapy and monitoring clinical outcomes (Alghadeer et al., 2020; Dib et al., 2014). Collaborative practice agreements, on the other hand, formalize the roles and responsibilities of pharmacists in managing specific disease states or therapeutic areas, enabling them to initiate, modify, or discontinue medication therapy within predefined protocols (Aljuhani et al., 2024; Alshaya et al., 2022).

These models not only enhance the quality of care and improve patient outcomes but also optimize healthcare resources by enabling pharmacists to practice at the top of their licenses and alleviating the workload of physicians (Aljuhani et al., 2024; Alshaya et al., 2022).

5. **Integration of Clinical Decision Support Systems (CDSS)** Clinical Decision Support Systems (CDSS) are becoming increasingly prevalent in Saudi Arabian healthcare settings, including outpatient pharmacies (Kaushal et al., 2003; Marasinghe, 2015). CDSS are computer-based systems that provide real-time, patient-specific recommendations to healthcare providers to aid in clinical decision-making and improve patient safety (Bates et al., 2003).

In outpatient pharmacy settings, CDSS can assist pharmacists in various ways, such as identifying potential drug interactions, dosing errors, and contraindications based on patient-specific factors (Marasinghe, 2015). Additionally, CDSS can provide evidence-based recommendations for medication selection, monitoring parameters, and therapeutic adjustments, supporting pharmacists in their medication therapy management efforts.

The effective implementation of CDSS in outpatient pharmacy workflows requires careful planning, training, and ongoing monitoring to ensure the systems are used appropriately and their recommendations are followed (Kaushal et al., 2003; Marasinghe, 2015).

6. **Patient Education and Self-Management Support** As Saudi Arabia's healthcare system shifts towards a more patient-centered approach, outpatient pharmacy services are placing greater emphasis on patient education and self-management support (AlOthman et al., 2017; Carini et al., 2021). Pharmacists, with their accessibility and medication expertise, are ideally positioned to empower patients by providing tailored education, facilitating shared decision-making, and promoting self-management strategies.

Patient education efforts may include providing comprehensive medication counseling, addressing medication adherence barriers, and offering guidance on lifestyle modifications and disease management techniques (Carini et al., 2021). Self-management support strategies may involve the use of digital health tools, such as mobile applications and patient portals, to facilitate remote monitoring, medication reminders, and real-time communication with healthcare providers (AlOthman et al., 2017; Belcher et al., 2019; Carini et al., 2021). By enhancing patients' understanding of their conditions and empowering them to take an active role in their care, pharmacists can contribute to improved health outcomes, reduced healthcare utilization, and enhanced patient satisfaction (AlOthman et al., 2017; Carini et al., 2021).

Challenges and Considerations

While the evolution of outpatient pharmacy services in Saudi Arabia presents numerous opportunities, it also brings several challenges and considerations that must be addressed:

1. **Workforce Development and Training** As the scope of pharmacy practice expands, there is a need for comprehensive workforce development and training initiatives to ensure pharmacists are equipped with the necessary knowledge, skills, and competencies to deliver advanced patient care services (Katoue & Schwinghammer, 2020; SALLOM, 2021). This may involve revising pharmacy curricula, implementing continuing professional development programs, and providing specialized training in areas such as medication therapy management, disease state management, and patient education strategies.
2. **Interprofessional Collaboration and Role Clarity** The successful implementation of expanded pharmacy services requires effective interprofessional collaboration and clear delineation of roles and responsibilities among healthcare providers (Aljuhani et al., 2024; Alshaya et al., 2022). Collaborative practice agreements, multidisciplinary care teams, and open communication channels can facilitate this collaboration and ensure seamless coordination of patient care.
3. **Regulatory and Reimbursement Frameworks** The sustainability of advanced pharmacy services hinges on the development of supportive regulatory frameworks and appropriate reimbursement models (Aljuhani et al., 2024; Alshaya et al., 2022). Policies and regulations should clearly define the scope of practice for pharmacists, establish standards for service delivery, and provide mechanisms for professional recognition and compensation.
4. **Integration of Technology and Digital Health Solutions** The effective integration of technology and digital health solutions into outpatient pharmacy workflows requires careful planning, change management strategies, and ongoing monitoring (Abdullah Alharbi, 2023; Evans, 2016). Challenges may include interoperability issues, data privacy and security concerns, and the need for continuous training and support for healthcare providers and patients.
5. **Patient Engagement and Acceptance** While patient empowerment and self-management are desirable goals, achieving meaningful patient engagement and acceptance of expanded pharmacy services can be challenging (Carini et al., 2021). Factors such as health literacy, cultural beliefs, and personal preferences may influence patients' willingness to adopt new models of care. Effective communication, tailored education, and proactive involvement of patients in care planning are essential to overcome these barriers.
6. **Quality Assurance and Continuous Improvement** As outpatient pharmacy services evolve, it is crucial to establish robust quality assurance measures and continuous improvement processes (Pham et al., 2013). Regular monitoring and evaluation of service delivery, patient outcomes, and stakeholder satisfaction should be conducted to identify areas for improvement and drive ongoing optimization of care models.

Conclusion

The healthcare landscape in Saudi Arabia is undergoing a transformative shift, and outpatient pharmacy services are at the forefront of this evolution. From traditional dispensing roles, pharmacists are expanding their scope of practice to encompass medication therapy management, disease state management, patient education, and preventive care.

The adoption of innovative models, such as telepharmacy, medication home delivery, pharmacist-led clinics, and collaborative practice agreements, is reshaping the role of pharmacists and positioning them as key contributors to patient-centered care. However, this evolution also brings challenges related to workforce development, interprofessional collaboration, regulatory frameworks, technology integration, patient engagement, and quality assurance.

Addressing these challenges will require concerted efforts from healthcare policymakers, professional organizations, educational institutions, and healthcare providers. By fostering a supportive environment and embracing a collaborative, patient-centered approach, Saudi Arabia can harness the full potential of outpatient pharmacy services and contribute to improved health outcomes, enhanced patient satisfaction, and a more sustainable healthcare system.

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