

# Pharmacist Prescribing System: A New Initiative in the Kingdom of Saudi Arabia

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## ABSTRACT

**Objectives:** To declare the pharmacist prescribing system as new initiatives in the Kingdom of Saudi Arabia. **Methods:** It is a new initiative project drove by national Pharmacist prescribing system services. The projects formulated from the international business model, pharmacy project guidelines and project management institution guidelines of a new project. The initiative project is written through project management professionals and contained of several parts, including the initial phase, the planning phase, the execution phase, the monitoring and controlling phase. **Results:** The pharmacist prescribing system services with a defined vision, mission and goals. The services had various benefits including clinical and economic on patients as illustrated in the review. The continuation of the project assured by risk management model description. In addition, the monitoring and controlling of the services as declared. The transition to operation project, though closing project stage explored in the analysis. **Conclusion:** The pharmacist prescribing system services is new initiative, part of the clinical pharmacy program. The Pharmacist prescribing system will reduce drug-related problems, improve clinical and economic outcomes of patients and the healthcare system and create patient's safety culture at healthcare organization; it is highly recommended to implement in Saudi Arabia.

**Keywords:** Pharmacist, Prescribing, System, Services, Initiative, Saudi Arabia.

## INTRODUCTION

Over the past years, the main job of the pharmacist was the preparation and desipping the medications and related accessories. In the 2000s, there were significant changes through pharmaceutical care concepts and related employment. The pharmacist should evaluate the patient's diseases, choose the appropriate medications and drug monitoring until they reach the clear clinical outcome of cure the disease, or alleviate the symptoms or prevention of the disease.<sup>[1,2]</sup> To implement pharmaceutical care, the college of pharmacies change their curriculum to meet the requirements of the pharmaceutical care concept locally or other countries.<sup>[3-5]</sup> After the pharmaceutical application, the pharmacist displayed a great job of improving clinical outcomes and reduced or prevent drug-related problems and avoid additional needless cost burden on the healthcare system in Saudi Arabia and other countries.<sup>[6-11]</sup> Despite of clinical and economic of pharmacist, the medication error still the primary concern of pharmacists with emphasis on the prescribing stage.<sup>[12-14]</sup> The pharmacist starts to take action and role in the prescribing stage to prevent prescribing mistakes through various education and training to improve the capability and ability of pharmacists prescribing medications. Multiple investigations showed the pharmacists could prescribe medications in various countries; for instance, Canada, the United Kingdom, Australia, the United States of America, Saudi Arabia, Nigeria and properly India.<sup>[15-20]</sup> The pharmacist can prescribe medications through

ambulatory care services, inpatient services, critical care services, oncology services and community pharmacy services.<sup>[21-23]</sup> The pharmacist is prescribing various medications, for instance; over the counter medications, total parental nutrition, cardiovascular medications, hormonal contraceptives and some oncology medications.<sup>[24-28]</sup> The previous studies displayed that pharmacist prescribing had favorable clinical outcomes, avoidance of additional unnecessary cost and increased the patient's satisfaction with their performance.<sup>[23,24,29-32]</sup> The pharmacist privilege of prescribing medications in Saudi Arabia has existed. However, it is not adequate broad for all healthcare institutions neither had pharmacy law of pharmacists prescribing except related to dispensing of over the counter medications by the community pharmacies.<sup>[33]</sup> The authors were not familiar based on their knowledge of publications about pharmacists prescribing as new initiatives project in the kingdom of Saudi Arabia or Gulf and Middle East countries. The aim of this topic is to review pharmacist prescribing as new initiatives project in Saudi Arabia.

## Method of the Project

It is a new initiative project drove by international pharmacy board regulations. The task force team of pharmacists prescribing system formulated and contained off from the author's expertise in the clinical pharmacy, pharmacy law and pharmacy administration, or pharmacy total quality management. The committee unitized and

drove the pharmacy hospital and community administration guidelines, from the textbook and international literature pharmacists prescribing system. It was written by utilizing the international business model, pharmacy project guidelines and project management institution guidelines of a new project.<sup>[34-37]</sup> The pharmacist prescribing system contained of the privilege of prescribing, the medications for prescribing, education and training need for prescribing medications, medication safety during prescribing. The project is written through project management professionals and consisted of several parts, including the initial phase, the planning phase, the execution phase, the monitoring and controlling phase.

## Initiative Phase

### Assessment Needs

In the healthcare system, the consultant or specialist or resident and intern student can prescribe the medications. While all clinical pharmacists and expert pharmacists had not the privilege of prescribing medications irrespective of their credentials. Some healthcare organizations underway to give more privilege of prescribing adults total parental nutrition because the majority of the physician not familiar with knowledge or practice total parental nutrition (TPN). There is no standardized of pharmacist prescribing locally or internationally. It is a special method to lessen the physician's prescribing workload and prevent prescribing errors. Furthermore, the curriculum of the college of pharmacies had been changed from a bachelor's degree to a doctor of pharmacy with more knowledge and clinical practice and more oriented to pharmaceutical care and close drug monitoring and prevent drug-related problems. It is a method to utilized more healthcare professionals of clinical pharmacists with additional services provided to the various patients and recover their quality of life.

### Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis

The SWOT analysis measured one of the famous tools for each new project analysis. The SWOT analysis is meaning strength, weakness, opportunities and threats, the strengths point of the project is setup pharmacists prescribing system at healthcare services the and prevention of physician prescribing mistakes, reductions of healthcare provider workload. While the weak points are limited pharmacy regulations or law existed locally or internationally. The opportunities points are the shortage of physician prescribers and patient safety program employment. The threat

points are if the pharmacy strategic plan does not exist and if the administration planner not available.

### Market Analysis

The majority of healthcare organizations had a physician prescribing system and seldom finding of pharmacists prescribing medications system. The pharmacist privilege prescribing medications system might be found with adults' total parenteral nutrition services at most of the healthcare institutions. Most of the governmental or private healthcare organizations had the pharmacist privilege prescribing system with TPN only as an independent prescriber. Some hospitals recognized the pharmacist prescribing system through collaboration method or countersign by the physician through anticoagulation clinics. Another healthcare service utilized the clinical pharmacist as a prescriber in the diabetic clinic. Also, the community pharmacists can dispense by law the over the counter medications without prescriptions, while the in-hospital not existed. The pharmacist privilege of prescribing system by law not standardized and not happened in the Kingdom of Saudi Arabia.

## Planning Phase

### Scope of the Project

The project covers the pharmacist prescribing system. It comprised prescribing privileges for pharmacists or clinical pharmacists, the type of medications, for instance, antibiotics, cardiovascular medications, CNS medications and chemotherapy agents. Moreover, the education and training for pharmacists prescribing medications, safety of pharmacists prescribing. In addition to the credentials of pharmacists or clinical pharmacists and type of pharmacy job with healthcare institutions or community pharmacy.

### Vision, Missions, Goals

The vision of the project is to reach the best pharmacist prescribing system at healthcare services, while the message to provide the appropriate pharmacist prescribing services to all patients at healthcare organizations and community institutions. The goal of the project is to set up regulations of pharmacists prescribing systems to fix credentials required for pharmacists prescribing medications. To recognize the type of medications for pharmacist prescribing, to inhibit any mistakes related to physician prescribing medication. Moreover, to reduce the workload for physicians and healthcare providers at the healthcare institutions and to evade the

additional economic burden on the healthcare system from the physician prescribing errors.

## Project Description

The following policies were put in place for every pharmacy staff, including clinical pharmacist and distributive pharmacists and other health care individuals:

- ✓ The pharmacist prescribing system committee (PPS) should be formulated at healthcare institutions.
- ✓ The PPS committee should contain of a clinical pharmacist, dispensing pharmacist, physician, surgeon, pediatrics and nurses.
- ✓ The committee set up and revises the standardized PPS and updates at least annually.
- ✓ The committee should conduct the education and training sessions to all healthcare providers, including pharmacy staff and all healthcare professionals' staff.
- ✓ The PPS distributed to healthcare sectors at the organization.
- ✓ The pharmacist writes the prescription based on the standardized system and privilege of medications.
- ✓ If the pharmacist wishes to prescribe outside the system, he or she countersigned through concern consultant and should document the justification.
- ✓ All medications needed to get privileges of prescribing needed to get the approval from PPS committee.
- ✓ The prescription should send to the pharmacy and pharmacist and pharmacy technician will prepare it based on PPS.
- ✓ The pharmacy staff sends the medications to the nursing department and the nurse administers the medications-based pharmacists prescribing policy, Or the pharmacist dispenses the medications to the ambulatory care clinic visitor or discharge patients.
- ✓ The pharmacy department should measure the clinical outcome of the PPS.
- ✓ The pharmacy department should measure the economic outcome of the PPS.
- ✓ The pharmacy department should document any prescription non-adherence to the PPS at healthcare organizations.

## Plan Cost Management

Each new project, the management team, must fix the financial budget, which comprises the cost of educational courses, pharmacists prescribing medications for all pharmacy staff and healthcare professionals, the cost of the management team meeting and the cost of updated references to setup medications

prescribing by a pharmacist. The budget must be supervision over a while until the project finished and switch to the operation PPS.

## Executing Phase

### Management Team

Project management professionals had multiple steps. One of the essential steps was executing phase, which had a team lead the program or the project from the beginning until becoming one of the operating systems at a healthcare organization. The team consisted of several members, including clinical pharmacists, distributive pharmacists, physicians, surgery, pediatrics physician, psychiatric physician, nurse, pharmacy quality management and medications safety officer representing. The team should implement and follow-up on the new services of pharmacists prescribing medications with regular informing of medications list required for prescriptions. Moreover, the team should educate and train the pharmacy and healthcare staff about the new services and measure the clinical and economic outcome of the project.

### Education and Training

Every new project requires special education and training for concern people. This project wants education and training for pharmacy staff, including clinical pharmacists, dispensing pharmacists and pharmacy technicians. Healthcare professionals, including a physician, nurses, surgeon, need another special education and training. Moreover, the team management needs orientation education about the PPS project for all healthcare professionals. The orientation emphasis on for any new pharmacy and staff healthcare providers joined the organization.

### Monitoring and Controlling Phase Project

#### Total Quality Management

There are various tools used for total quantity management with new project pharmacists prescribing system during the implementation phase and imitate the impact and the balance scored cards was among them. The tools monitor contained of four-part that's including the finance, internal process, customer, education and innovation.<sup>[38]</sup> The assessment of healthcare services of pharmacists prescribing medications system was an example of an internal process type. The clinical outcome of pharmacists prescribing medications services, which might reflect the education and competency of clinical pharmacists, distributive pharmacists and pharmacy technicians as an example of the education type. The financial

type had another example of measuring the cost avoidance of the pharmacists prescribing medications system. The fourth type was the customer types with calculating the patient's satisfaction or healthcare providers or pharmacy staff of PPS satisfaction in Saudi Arabia.

### Risk Management

There are several measured risks in that is including schedule risks, scope risks, personal risks, budget risks, technical risks and quality risks.<sup>[39,40]</sup> The project pharmacist prescribing medications system mostly exposed to risks such as personnel, budget, technical and quality risks. The project properly suffered from personal risks with the non-trained pharmacist or nor sufficient pharmacists and pharmacy technicians for prescribing. The budget risk not covered the education and training courses for all pharmacy staff, including clinical pharmacists and distributive pharmacists. There is another of technical risk maybe exposed. The technical which is limited to electronic recourses during pharmacists prescribing or not friendly use computer system in pharmacy practice. The project maybe exposed to quality risks with not implemented pharmacists prescribing system and medication safety tools or non-trained personnel in this field.

### Closing of the Project

The pharmacist privileges prescribing system at all healthcare institutions of governmental and private sectors are required to improve prescribing pattern, to prevent drug-related physician prescribing errors lead to morbidity and mortality and to prevent any additional unnecessary cost on pharmacy and healthcare system including the hospitals and primary healthcare centers services in Saudi Arabia. The project PPS should continue at all units of hospitals and community pharmacies intravenous and keep supervision through related committees. The pharmacist privilege prescribing system education and training should be implemented accordingly. PPS should update regularly and expand the types and number of medications is recommended in the future. The annual celebration of all pharmacists' prescribers and supporting pharmacy staff, including pharmacists and pharmacy technicians, is highly recommended in Saudi Arabia.

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### CONFLICT OF INTEREST

None.

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## ETHICAL APPROVAL

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<https://www.hhs.gov/ohrp/regulations-and-policy/decision-charts-2018/index.html>

## ABBREVIATIONS

**MOH:** Ministry of Health; **KSA:** Kingdom of Saudi Arabia; **Total Parenteral Nutrition;** **SWOT:** Strengths, Weaknesses, Opportunities and Threats; **BSC:** Balance Scored Cards; **PPS:** Pharmacist Prescribing System.

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