

Infection Control Pharmacist: A New Initiative Project in the Kingdom of Saudi Arabia

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ABSTRACT

Objectives: To declare the Infection control pharmacist as new initiatives in the Kingdom of Saudi Arabia. **Methods:** It is a new initiative project drove by national and international Infection control regulations and guidelines. The projects are formulated from the global business model, pharmacy project guidelines and professional project management elements. The initial project followed the project management professionals, including the initial phase, the planning phase, the execution phase and the monitoring and controlling phase. **Results:** The vision, mission and goals of the Infection control pharmacist are explored. The services had various benefits, including clinical and economical, on patients, as illustrated in the review. The continuous of the project revised by the risk management model description. Moreover, the monitoring and controlling of the services as declared. The transition to operation project through closing project stage explored in the analysis. **Conclusion:** The Infection control pharmacist is a new initiative and part of the clinical pharmacy specialties and pharmacy infection control services. The Infection control pharmacist meet the demand of pharmacy infection control, prevent infection control related problems and contribute during epidemic or pandemic and medical disaster; it is highly suggested to implement in Saudi Arabia

Key words: Infection control, Pharmacist, Pharmacy, Services, Initiative, Saudi Arabia.

INTRODUCTION

Over the past years, several epidemic or pandemic and public health emergency had occurred. From Acute Respiratory Syndrome (SARS), influenza A (H1N1), Middle East respiratory syndrome coronavirus (MERS-CoV), Zika virus-related disease and the Coronavirus Disease 2019 (COVID-19)^{1,2} In each situation, essential infection control tools had been done to prevent the infection spread throughout several countries.³⁻⁵ The infection control starting from use necessary infection control measures of hand washing techniques, using sanitizer or chemical disinfectant and isolation of infected cases, or isolated of cities form to enter and outer from it³⁻⁵ Besides, several studies showed resistance bugs locally and overall the world,⁶⁻¹⁰ and high consumption of broad spectrum of antibiotics and increased economic burden at emergency, inpatient ward, critical care and ambulatory care services.¹¹⁻¹⁶ Moreover, the pharmacy services consisted of m preparation, distribution and dispensing parenteral or ophthalmic medications. Those pharmacy units need bright places and preparation of sterile products. As a result, the infection control tools for staff, equivalent, places, furniture required for all pharmacy services units to keep clean and without infected preparation. However, various reports showed there were some contaminated preparation lead to infected patients or death.^{17,18} Other studies showed knowledge and practice were poor adherence to infection control. Healthcare professionals, including physicians, dentists, or nurses and student healthcare, while full-time pharmacists have not existed until now.¹⁹⁻²² The

clinical pharmacist specialized in infection control was suggested as one specialized clinical pharmacist in the pharmacy strategic plan with updated vision 2030 as an infection control pharmacist.²³ The American Society of Health system pharmacist stated the pharmacist's role in the Antimicrobial Stewardship and infection control performances as combined in one specialty.²⁴ There are various publications about general infection control.^{3-5,25-28} However, very few studies existed worldwide about pharmacy infection control.^{24,29} Based on their knowledge, they are not familiar with any investigations about infection control pharmacists locally or Gulf or Middle East countries and all the world about infection control pharmacists. The aim of this project review to declare the infection control pharmacist as new initiatives project in the kingdom of Saudi Arabia.

Method of the project

It is a new initiative project drove by international Infection control institutions programs. The task force team of Infection control pharmacist charity from the author's expertise in the pharmacy administration and infectious diseases and infection control healthcare professionals. The committee unitized international infection control for healthcare professionals, including a pharmacist. Besides and international litterateur of infection control pharmacy. It was written by utilizing the global business model, pharmacy project guidelines and professional project management elements of a new project.³⁰⁻³³ The Infection control pharmacist is based on the type of infection control and pharmacy units need

infection control system, job description of Infection control pharmacist and Infection control pharmacist activities. The project followed project management professionals and consisted of several parts, including the initial phase, the planning phase, the execution phase and the monitoring and controlling phase.

Initial phase

Assessment needs

Pharmacists and pharmacy technicians prepare multiple medications at all pharmacy units, including the intravenous administration, inpatient and outpatient pharmacies. Besides, compounding of extemporaneous preparations. All those preparations as parenteral or oral route need to be without any bugs contamination. That preparation of medications requires an infection control tool to test random samples from that preparation to check and assure without bugs contamination, incredibly sterile Intravenous or ophthalmic preparation and oral extemporaneous oral or topical preparation. The accident contamination of needle stick during medications preparation need particular guidelines and monitoring the accident cases. The sanitizer and chemical disinfectant of the shelf, floor, furniture of pharmacy departments need an approach for usage. Moreover, the active surveillance of contamination bugs of pharmaceutical preparation, or infected staff pharmacists, return medications from healthcare departments. All previous reasons required unique trained pharmacist or specialized clinical pharmacists on pharmacy infection control to implement and implement all last performance and activities.

SWOT analysis

SWOT analysis is considered one of the standard tools for each current project was the analysis of Infection control pharmacists. The SWOT analysis is identifying strength, weakness, opportunities and threats. The project's strengths are setup up the Infection control pharmacist, providing appropriate pharmacy infection control, preventing sanitizer and chemical disinfectant mistakes and building infection control and sanitation culture. In contrast, the weak points are the limited number of pharmacy staff, including clinical pharmacists. The opportunities point to high demand for infection control pharmacists during epidemic or pandemic and public health emergency from the program implementation, the availability of approved infection control education and training programs. The threat points are if the pharmacy strategic plan does not exist in pharmacy infection control and if the administration planner not available.

Market Analysis

The majority of the healthcare organizations had pharmaceutical care services and consisted of inpatient pharmacy, outpatient pharmacy, intravenous admixture services, drug information center and clinical pharmacy services. Besides, the pharmacy's total quality management and medication safety officers. However, the infection control pharmacist not existed at all healthcare institutions in Saudi Arabia. Most hospitals or community pharmacists had implemented general infection control as one unit of other healthcare departments. However, infection control for pharmacy in such detail not existed in practice. Some hospitals had clinical pharmacists specialized in infectious diseases to take care of some infection control pharmacists' jobs like antimicrobial resistance, while sanitizer or chemical disinfectant for all sections of pharmacy units not available. The pharmacy unit implemented an intravenous admixture with some monitoring parameters of infection control in the testing bugs of laminar flow hood, the equipment used for sterile parental medications. Preparation made guidelines for parenteral dilution and administration of the medicines special for them. The procedures consisted of medications, drug strength, rate of administration and

stability of intravenous infusions. This pharmacy practice situation looks like other Gulf and Middle East countries while nothing available in the local and even the international market.

Planning phase

Scope of the project

The project covers an Infection control pharmacist. That includes common types of Infection control pharmacist practice, the pharmacy infection control program and the administration of Infection control in the hospital and community pharmacy. Moreover, the job description of Infection control pharmacists.

Vision, Missions, Goals

The project's vision is to reach the best Infection control pharmacist job, while the message to provide the appropriate Infection control pharmacist performance and activities to the pharmacy organizations and populations. The goals of the project to fix the Infection control pharmacist job, to inhibit any compounding mistakes related to pharmacy infection control, to reduce the workload for pharmacy staff on pandemic and emergency public Health, to implement the pharmacy infection control during regular days and mass gatherings pharmaceutical care Hajj and Omra and to avoid the additional unnecessary and additional cost on the pharmacy and healthcare system as the impact of Infection control pharmacist

Project description

The following policies were put in place for every pharmacy staff and other health care individuals:

- ✓ The Pharmacy Infection control committee should be formulated at healthcare institutions
- ✓ The Pharmacy infectious control committee should consist of an infection control pharmacist as head of the committee and other members including IV pharmacist, the inpatient pharmacist, ambulatory care pharmacist and pharmacy technician and infection control representative,
- ✓ The committee revises the standardized Infection control pharmacist and pharmacy services and updates at least annually.
- ✓ The Infection control pharmacist education and training sessions should be conducted by the committee to all healthcare providers, including physicians and nurses, with pharmacy staff.
- ✓ The Infection control pharmacist distributed to healthcare sectors at the organization
- ✓ The Infection control pharmacist implement the infection control at all pharmacy services based on national and international infection control guidelines and regulations
- ✓ The Infection control pharmacist prescribes the sanitizer and disinfectant for the pharmacy environment, units and staff.
- ✓ The Infection control prescription should be sent to all pharmacy sections, clinical compounding pharmacist for preparation if necessary and IV pharmacist.
- ✓ The Infection control pharmacist makes daily and periodically round of pharmacy infection control for active surveillance to all pharmacy staff, pharmaceutical services and all IV medications in the hospital wards.
- ✓ The Infection control pharmacy committee should measure the clinical outcome of the Infection control pharmacist
- ✓ The Infection control pharmacy committee should measure the economic outcome of the Infection control pharmacist
- ✓ The Infection control pharmacist should document any preparation non-adherence to the standardized infection control

Plan cost management

Every current new project Infection control pharmacist, the management team must set out the financial budget. This includes the cost of Infection control pharmacist educational courses pharmacy staff and healthcare professionals, the management team meeting's expense and the cost of updated pharmacy infectious control references. The budget must be supervision over a while until the project is finished and switch to the operating system.

Executing phase

Management team

Project management professionals had multiple steps. One of the essential steps was the executing phase, a team lead the project from the beginning until becoming one of the healthcare organization's operating systems. The team consisted of several members, infectious disease clinical pharmacists, distributive pharmacists, infection control medical physicians and nurses, pharmacy technician experts in the infection control, pharmacy quality management and medication safety officer representing. The team should implement and follow up on the new services Infection control pharmacist with regular updating of the job description. Moreover, the team need to educate and train the pharmacy staff and healthcare staff about the new services Infection control pharmacist and measure the project's clinical and economic outcome.

Education and training

The new project requires infection control pharmacists need education and training for concerned people. This project needs education and training for pharmacy staff, including clinical pharmacists, pediatrics pharmacists and pharmacy technicians. The healthcare professionals, including infection control physicians and nurses, need another special education and infection control pharmacists training. Moreover, orientation for the team management required about the project Infection control pharmacist for all healthcare professionals. The orientation emphasis any new staff healthcare providers joined the healthcare institutions. The Infection control pharmacist needs special education and training about infection control and epidemiology.

Project total quality management

There are various methods used for total quantity management required for the project infection control pharmacist, while the implementation phase reflects the impact. The balance scored cards were among them.³⁴ The monitoring tools consisted of the customer, finance, internal process, education and innovation. For instance; The assessment of healthcare services was an example of an internal process type. The infection control pharmacist project's clinical outcome reflects the education and competency of pediatrics clinical pharmacists, pharmacists, pharmacy technicians were as an example of the education style. The measuring the cost avoidance of the Infection control pharmacist is an example of financial type. The fourth type was the customer types measuring the patient's satisfaction with healthcare providers, including pharmacists and pharmacy technicians, Infection control pharmacist satisfaction in Saudi Arabia.

Risk Management

There are multiple considered risks, including schedule risks, scope risks, budget risks, personal risks, technical risks and quality risks.^{35,36} The project is mostly exposed to personnel, budget, technical and quality risks with the current new project Infection control pharmacists. The project adequately suffered from personal threats with not trained pharmacy staff or sufficient pharmacists and pharmacy technicians. The financial budget risk; not covered the Infection control pharmacist

education and training courses for all pharmacy staff and healthcare professionals. There is another technical risk that might be exposed. The technical included limited electronic recourses of pharmacy infection control or not existed the active surveillance computer system in pharmacy practice. The project maybe is exposed to quality risks with not implemented safety tools of infection control pharmacists; or non-trained personnel. Moreover, the scope risk may be exposed to Infection control pharmacists and various activities might conflict with infectious disease pharmacists.

Closing of the project

The infection control pharmacist at all healthcare services, either governmental and private sectors, is required. To prevent infection in the pharmaceutical material, equipment, personnel-related issues and avoid infection control-related mistakes, it will lead to morbidity and mortality and avoid an economic burden on pharmacy and healthcare system, including the hospitals and community pharmacies services Saudi Arabia. The project should continue at the Infection control pharmacist Intravenous at each hospital and community pharmacy unit and keep supervision through related committees. The Infection control pharmacist education and training should be implemented accordingly. Infection control pharmacist Performances and activities should Update regularly and expand the quantity and quality of the activities are recommended in the future. The annual celebration of all Infection control pharmacists, including clinical pharmacists, pharmacist and pharmacy technician, is highly recommended in Saudi Arabia

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CONFLICT OF INTEREST

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Consent for Publications

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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; **ASHP:** American Society of Health-System Pharmacists; **SWOT:** Strengths, Weaknesses, Opportunities and Threats; **IV:** Intravenous; **BSC:** Balance Scored Cards; **SARS:** Acute Respiratory Syndrome; **H1N1:** influenza A; **MERS-CoV:** Middle East respiratory syndrome coronavirus; **COVID-19:** Coronavirus Disease 2019.

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