

National Survey of Pharmacy and Therapeutic Committees in Saudi Arabia: Scope, Structure and Responsibilities

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ABSTRACT

Objectives: The Pharmacy and Therapeutics (PTC) committee, sometimes aptly named the Formulary Committee. PTC is charged with determining the hospital formulary, decisions are made about the inclusion or exclusion of new pharmacotherapeutic and diagnostic agents for inpatients and outpatients. This committee is typically composed of a multidisciplinary team of pharmacy, physician, nursing and hospital clinical and administrative leadership. The aim of the study was to explore the Therapeutic Committee at MOH hospitals in Saudi Arabia: scope, structure and responsibilities. **Methods:** It is a 4-month cross-sectional survey of National Survey of Pharmacy and Therapeutic Committee at MOH hospitals in Saudi Arabia. The survey consisted of 93 questions divided in two parts: the first part collects the demographic information, the second part contains questions on 4 domains: (1) scope, structure and responsibilities, that is including questions about the pharmacy and therapeutic committee membership, clear mission, vision and values of the pharmacy and therapeutic committee, the responsibilities of the PTC committee and the Sub-committees of Pharmacy and Therapeutic Committee, (2) formulary management system, (3) evaluation of drug formulary and decision-making, (4) committee meetings organization and management. The survey was distributed to the fifty-drug information centers at Ministry of Health hospitals. The survey was in an electronic format with analyzed scope, structure and responsibilities through the survey monkey system. **Results:** The total number responders were fifty drug information centers. Of those, 48 (96%) was Saudi and 2 (4%) was non-Saudi. There were 16 (32%) females and 34 (68%) were males. Most of the PTC committee members consisted of a chief of pharmacy department 45 (90%), medical director 41 (82%), physician medical 40 (80%) and head of drug information center 32 (64%). The highest score statements related to committee were the functions of PTC (3.78), objectives (3.61), mission (3.57), with least one was a vision (3.56) and values (3.5). The most responsibility scoring statement was distributed the addition and deletion (4.08), all the departments receive the copy of the revised formulary (4.04), drug evaluation and selection for the hospital was (3.9), drug policy development was (3.9), while the lowest scores were Holds educational programs within the hospital (3.25) and drug monitoring system was (3.57). Most of the subcommittee existed antibiotic committee 38 (76%), medication safety committee 38 (76%), followed by drug utilization committee 9 (18%) and therapeutic guidelines committee 9 (18%). **Conclusion:** One-third of hospital missed drug information center pharmacist as the member of PTC committee and the pharmacy qualifications of committee members need to improve. Update the committee system and close monitoring required for all MOH hospitals in Saudi Arabia.

Keywords: National, Ministry of Health, Saudi Arabia, Scope, Structure, Responsibilities.

INTRODUCTION

In every hospital, medications and medical supplies are critical to the delivery of services. However, according to the WHO, the availability of the drugs in the hospital depends not only on good supplies but also on their efficient management of medication. One of the most critical approaches has been to improve medication management and use in various health settings. In a hospital setting, Hospital Pharmacy and Therapeutics Committees "PTC Committee" is a practical approach in ensuring that medicines are used in a safe, appropriate and cost-effective manner.^[1,2] The Pharmacy and Therapeutics Committee (PTC), sometimes aptly named the Formulary Committee. Formularies have been used by a broad spectrum of organizations in the USA.^[3] PTC used to determine the hospital for-

mulary and addition and deletion of new pharmacotherapeutic and diagnostic agents for the hospital. This committee typically consists of a multidisciplinary team of pharmacy, physician, nursing and hospital clinical and administrative leadership.^[1,2]

Several studies had been done around the world discussed the scope and activities of PTC.^[4] For instant; The Structure and procedures of the pharmacy and therapeutics committees in Spanish hospitals reveals that PTC Committees have looked like a structure and function with multidisciplinary professional composition. They addition or deletion drugs is similar in different types of hospital.^[5] In the study of the Structure and activities of hospital drug committees in Germany. At 53.2% of drug committees, a phar-

macist holds the position of chairman, followed by medical specialists (32%); clinical pharmacologists hold this position in only 7.7% of the general hospitals. The number of members in between 5-40 with a median 12.^[6] In the local study of the characteristics of the Pharmacy and Therapeutic Committees in Saudi Hospitals, reveals that of 30 hospital pharmacies, 23 (76.6%) pharmacy managers responded. The average total number of the PTC committee members is (13.5) and dominated by physicians (6.9), pharmacists (2.7) and nurses (1.4) and the pharmacist coordinated all surveyed committee.^[7]

In the Ministry of Health of Saudi Arabia, the PTC well established before than 30 years ago with peripheral regional PTCs. They had a systemic way of formulary system and addition and deletion medication from the MOH drug formulary.^[8,9] Besides, the PTC has proven to be effective in improving prescribing, dispensing and resource allocation and management, according to the Saudi Central Board for Accreditation of Healthcare Institutions "CBAHI" Standards; as the hospital establishes a multidisciplinary team of the pharmacy and therapeutics committee for oversight of the hospital formulary and medication use.^[10] However, in practice, the central or regional PTCs scopes, structure and responsibilities should be the same and there is very few excised studies based of the best knowledge to explore those parameters in local country or Gulf and Arab countries.^[7] This study aims to assess the Therapeutic Committee at MOH hospitals in the Kingdom of Saudi Arabia: Scope, structure and responsibilities.

METHODS

It is a 4-month cross-sectional survey of National Survey of Pharmacy and Therapeutics Committee at MOH hospitals in Saudi Arabia. The survey consisted of 93 questions divided in two parts: The first part collects the demographic information, the second part contains questions on 4 domains: (1) scope, structure and responsibilities, that is including questions about the pharmacy and therapeutic committee membership, clear mission, vision and values of the pharmacy and therapeutic committee, the responsibilities of the PTC committee and the Sub-committees of Pharmacy and Therapeutic Committee, (2) formulary management system, (3) evaluation of drug formulary and decision-making, (4) committee meetings organization and management. The survey drives from previous literature and local regulation and American Society of Health-System Pharmacists (ASHP) standards of PTC and Formulary system.^[1,2,8,9,11,12] All Pharmacoeconomics or review investigates of PTC

Table 1: Demographic responder qualifications information

Gender	Response Count	Response Percent
Male	34	68.0%
Female	16	32%
Answered question	50	
Skipped question	0	
Nationality	Response Count	Response Percent
Saudi	48	96.0%
Non- Saudi	2	4.0%
Answered question	50	
Skipped question	0	
Academic Qualification (s):	Response Count	Response Percent
Diploma. Pharmacy	2	4.00%
Bsc. Pharmacy	23	46.00%
Master of Science	10	20.00%
Master Clinical Pharmacy	9	18.00%
Doctor of Pharmacy	10	20.00%
Two years Residency (R1)	0	0.00%
Three years Residency (R2)	0	0.00%
Ph. D	2	4.00%
M.B.A.	1	2.00%
Other (please specify)	1	2.00%
Answered question	50	
Skipped question	0	
Total years you worked as pharmacist	Response Count	Response Percent
> 1 year	1	2.0%
1 – 3 years.	4	8.0%
4-6 years.	10	20.0%
> 6 years.	35	70.0%
Answered question	50	
Skipped question	0	
Position in PTC committee	Response Count	Response Percent
Chairman	4	8.3%
Vice-chairman	15	31.3%
Secretary	6	12.5%
Coordinator	2	4.2%
Assistant secretary	2	4.2%
Committee member	21	43.8%
Answered question	48	
Skipped question	2	

Years of Experiences as a PTC committee member	Response Count	Response Percent
> 1 year	10	20.0%
1 – 3 years.	17	34.0%
4-6 years.	15	30.0%
> 6 years.	8	16.0%
answered question	50	
skipped question	0	

included the study and any comparative of PTC studies or perception excluded from the study. The 5-point Likert response scale system closed and ended questions used. The survey was distributed to fifty Drug Information Center at the Ministry of Health hospitals. All size capacity or type of specialty hospital was included in the study. The survey was in an electronic format and it analyzed scope, structure and responsibilities through survey monkey system.

RESULTS

The total number responders were fifty drug information centers. Of those, 48 (96%) was Saudi and 2 (4%) was non-Saudi. There were 16 (32%) females and 34 (68%) were males. The most educational level of the responders were bachelor degree of pharmacy 23 (46%), followed by Pharm.D 10 (20%) and master of clinical pharmacy 9 (18%) with more than three experiences as pharmacist 45 (90%). The majority of responders were PTC member 21 (43.8%) and vice-chairman 15 (31.3%) with duration of 1-6 years (64%) in PTC membership (Table 1). The majority responders from the (100-299) bed hospitals 28 (56%) with accredited from CBAHI 33 (66%), Saudi commission of health specialties 15 (30%) and Joint commission USA 13 (26%) (Table 2). Most of the PTC committee members consisted of a chief of pharmacy department 45 (90%), Medical Director 41 (82%), physician medical 40 (80%) and head of drug information center 32 (64%) (Table 3). The highest score statements related to committee were the functions of PTC (3.78), objectives (3.61), mission (3.57), with least one was a vision (3.56) and values (3.5) (Table 4). The most responsibility scoring statement was distributed the addition and deletion (4.08), all the departments receive the copy of the revised formulary (4.04), drug evaluation and selection for the hospital was (3.9), drug policy development was (3.9), while the lowest scores were holds educational programs within the hospital (3.25) and drug monitoring system was (3.57) (Table 5). Most of the subcommittee existed antibiotic committee 38 (76%), medication safety committee 38 (76%), followed by drug utilization committee 9 (18%) and therapeutic guidelines committee 9 (18%) (Table 6).

Table 2: Demographic hospital information

Number of beds at your hospital	Response Count	Response Percent
< 50	4	8.0%
50-99	6	12.0%
100-199	14	28.0%
200-299	14	28.0%
300-399	5	10.0%
400-499	4	8.0%
500-599	2	4.0%
= or > 600	0	0.0%
Medical City	1	2.0%
Answered question	50	
Skipped question	0	
The hospital accreditation	Response Count	Response Percent
CBAHI	33	66.0%
Joint Commotion USA	13	26.0%
Canada	0	0.0%
Saudi commission of health specialties	15	30.0%
Non accredited	11	22.00%
Answered question	50	
Skipped question	0	

Table 3: the Pharmacy and Therapeutic Committee consisted of the following members

Answer Options	Response Count	Response Percent
Director of hospital	8	16.0%
Deputy director of hospital	11	22.0%
Physician Medical	40	80.0%
Physician Surgery	30	60.0%
Physician Pediatrics	21	42.0%
Medical director	41	82.0%
Chief of medical department	25	50.0%
Chief of pharmacy department	45	90.0%
Assistant chief of pharmacy department	10	20.0%
Chief of Inpatient pharmacy	10	20.0%
Chief of Outpatient pharmacy	7	14.0%
Chief of Drug information center	32	64.0%

Nursing Department Representative	26	52.0%
Clinical Pharmacist	20	40.0%
Staff Pharmacist	10	20.0%
Chief of Medication safety officer	11	22.0%
Chief of Total Quality Management Pharmacy	22	44.0%
Chief of Pharmacy Informatics	3	6.0%
Director of Pharmacy Store	15	30.0%
Hospital Total Quality Management Representative	18	36.0%
Pharmacy Technician	2	4.0%
Medical store of hospital director	1	2.0%
Chief of surgery	1	2.0%
Chief ICU	1	2.0%
Cardiologist	1	2.0%
Chief of OB department	2	4.0%
Head of ER physician	2	4.0%
The director of nursing services.	1	2.0%
Other	2	4.0%
answered question		50
skipped question		0

DISCUSSION

The Ministry of health updated all health-care systems, administration and committee related issues based on MOH strategic plan 2010-2020.^[13,14] The pharmacy and Therapeutic committee are new names after updating of old updating MOH drug formulary. The committee head by assistant minister, deputy for medical supply and logistic and membership of directors of medical supply general administration, Pharmaceutical Care general administration, national drug information center, a clinical pharmacist from the hospital, Pharmaceutical planning of medical supply, Pharmacoeconomic pharmacist, the meet on a monthly basis. During the period of membership as director of general administration of Pharmaceutical Care, the committee made significant reductions as follows, but not lim-

ited to, for instants; the committee updated and added more five hundred new line items. The committee updated primary care medical list, updated Cardiopulmonary Resuscitation (CPR) medication list for adults and pediatric. The committee added a ready-made, fixed standard concentration of some CPR medication. The committee supports the Implementation of the medicines safety program. Also, the updated some pharmacy services including intravenous admixture services at more thirty hospitals.^[8,9] In the study, the authors utilized drug information center pharmacy because the PTC part of the drug information center duties and expected drug information pharmacists should be an active member of the PTC. The study finding should most of the drug information pharmacist were Saudi and that is expected because of the Saudization policy in KSA. Most drug information pharmacists had a bachelor's degree because of the new system of Pharm D in college of pharmacies.

The findings of the study showed the head of the pharmacy department, medical directors, medical physicians and drug information pharmacist most active members in the PTC similar to previous study.^[7,15,16] That is expected because the old regulations of PTC which composed of those members while the medication safety officer or pharmacy informatics or critical care departments and emergency or nursing not commonly had members not part of the old regulation. The update regulation of PTC is required to activate the role of other essential pharmacy or medical departments. Despite the local standers of pharmacy accredited emphasized of PTC; still, some hospital did not have some primary elements of PTC, including vision or mission and objective and functions similar to the previous study.^[7] That may lead to PTC not function well in practice and subsequent not accredited by local or international institutions. Besides, some functions of PTC not implemented, especially in the medication's safety and similar to what it should in the current study. The results should drug accepted or reject of drug hospital formulary the primary function while drug monitory or evaluation system and off labeled or therapeutic interchange not fully implemented and functioning well as most the hospital. That may lead several discrepancies in the medication safety and additional economic burden on the healthcare system at MOH institutions. The most subcommittee functioning in the surveyed hospital was antibiotics and medications, safety subcommittee, while one-quarter of the hospital had not any functioning subcommittee. According to the ASHP Guidelines on the pharmacy and therapeutics committee and the Formulary System. The PTC committee may find subcommittees that address specific therapeutic areas

Table 4: Clear mission, vision, and values of the Pharmacy and Therapeutic Committee

Answer Options	PTC is applying 100% of the elements	PTC is applying 75% of the elements	PTC is applying 50% of the elements	PTC is applying 25% of the elements	PTC is NOT applying the elements	Rating Average	Response Count	
The mission written, distributed to all Pharmacy and Therapeutic Committee members.	14	15	13	1	7	3.56	50	
Vision is written, distributed to all Pharmacy and Therapeutic Committee members.	15	14	11	2	7	3.57	49	
Values are written, distributed to all Pharmacy and Therapeutic Committee members.	16	11	12	4	7	3.50	50	
Objectives are written, distributed to all Pharmacy and Therapeutic Committee members.	18	10	12	2	7	3.61	49	
Functions are written, distributed to all Pharmacy and Therapeutic Committee members.	18	14	10	5	3	3.78	50	
Standard operation procedures are written, distributed to all Pharmacy and Therapeutic Committee members	14	17	9	3	4	3.72	47	
<i>answered question</i>								50
<i>skipped question</i>								0

Table 5: The responsibilities of the PTC committee.

Answer Options	Always	Often	Sometimes	Rarely	Never	Rating Average	Response Count	
Drug evaluation and selection for the hospital formulary	20	12	13	3	2	3.90	50	
Drug policy development	21	10	14	3	2	3.90	50	
Drug monitoring system	15	13	10	7	4	3.57	49	
All the departments receive the copy of the revised formulary	23	15	7	3	2	4.08	50	
The drug removal /addition forms distributed to all the clinics, wards by pharmacy	21	14	10	3	1	4.04	49	
Holds educational programs within the hospital	8	13	16	11	2	3.28	50	
<i>answered question</i>								50
<i>skipped question</i>								0

Table 6: The Sub-committees of Pharmacy and Therapeutic Committee.

Answer Options	Response Count	Response Percent
Antibiotic Committee.	38	76.0%
Medication Safety Committee.	38	76.0%
IV Therapy Committee	5	10.0%
Adults Nutrition Support Committee	0	0.0%
Drug Utilization Committee	9	18.0%
Pediatrics Nutrition Support Committee	2	4.0%
Therapeutic Guidelines Committee	9	18.0%
Pain Management Committee	7	14.0%
Anti-coagulation committee	8	16.0%
Non	4	8.0%
<i>answered question</i>		50
<i>skipped question</i>		0

to be beneficial (e.g., antimicrobial, cancer chemotherapy, cardiovascular, adverse-drug-reaction, or biotechnology subcommittees). [1,2] Despite the antimicrobial stewardship and medication safety program established at MOH,^[17,18] it seemed antibiotics or medications safety subcommittee not functioning well because the main scopes or functions not implemented well in practice. Besides, the drug utilization and therapeutic guidelines subcommittee was not active at more than eighty percent of the hospitals. Some very important subcommittee was not existed at most of the hospitals nutrition support committees for adults and pediatrics or pain management or anticoagulants subcommittee. Those necessary subcommittees were essential to run some national clinical and pharmacy practice programs at that are times.^[19,20]

The scopes or functions and responsibilities of PTC was not active well at most of the hospitals. An education course about PTC is required for

all MOH hospitals and close monitoring of the implementation of the update PTC system is highly recommended at all MOH hospital in the Kingdom of Saudi Arabia.

CONCLUSION

The scopes and functions of PTC at MOH hospitals are not adequately implemented. The PTC membership regulation is old and should be updated. The subcommittees of PTC were few and should expand in quantity and quality manner. Targeting of education and training of PTC members is required with an annual survey of PTC scopes and responsibilities is highly recommended in the Kingdom of Saudi Arabia.

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CONFLICTS OF INTEREST

The authors declare no conflicts of interest.

ABBREVIATIONS

WHO: World Health Organization; **PTC:** Pharmacy and Therapeutic Committee; **USA:** United States of America; **MOH:** Ministry of Health; **ASHP:** American Society of Health-System Pharmacists; **DTC:** Drug and Therapeutics Committees; **CPR:** Cardiopulmonary Resuscitation; **CBAHI:** Saudi Central Board for Accreditation of Healthcare Institutions; **KSA:** Kingdom of Saudi Arabia.

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