National Survey of Pharmacy and Therapeutic Committee in Saudi Arabia: Meetings, Organization, and Management

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Received: 03-05-2019;
Accepted: 27-06-2019

Access this article online
www.ijpcs.net
DOI: 10.5530/ijpcs.2019.8.52

ABSTRACT
Objective: Pharmacy and Therapeutic Committee (PTC) is required for the effective running of a hospital. In the beginning, there was no such concept of drug committee, but with the advent of time, the need for an effective PTC started increasing. In the PTC, the pharmacist, physicians and nurses play an important role, in addition to the presence of an administrative. This study aims to explore the importance of having effective meetings organization and management of PTC at Ministry of Health (MOH) hospitals in Saudi Arabia. The purpose of this study was to explore the meetings organization and management of PTC at MOH hospitals in Saudi Arabia. **Methods:** This is a 4-month cross-sectional national survey of PTC at MOH hospitals in Saudi Arabia. The survey consisted of two parts: the first part collected demographic information and the second part consisted of 93 questions divided into four domains: Domain 1: the scope, structure and responsibilities; domain 2: the formulary management system; domain 3: evaluation of drug formulary and decision-making; and domain 4: organization and management of committee meetings. This questionnaire was prepared in an electronic format and was distributed all drug information centers at MOH hospitals. It analyzed organization and management of committee meetings through Survey Monkey system. **Results:** A total of 50 drug information centers responded to the questionnaire (100% response rate). The person leads the discussion in PTC was a Chairman of the Committee (29 (58%)), Chief of Pharmacy (13 (26%)) and Director of Drug Information (3 (6%)). The number of scheduled meetings per year (1–4) was 18 (36%) per hospital with a duration (1-2 hrs) at 48 (96%). Most of discussions were related to medications of infectious diseases (26 (52%)) and cardiovascular diseases (21 (42%)). Most of the challenging recommendations that needed implementation was a lack of resources (37 (74%)), lack of hospital administrator support (23 (46%)) and lack of pharmacist role (18 (36%)). **Conclusion:** The PTC is a demanding scientific resource and administrative support. Total quality management system, workload analysis, positive outcomes of PTC were lacking. Special education and training needs to be provided to all the healthcare providers with hospital administrator's support.
Keywords: National Pharmacy and Therapeutic Committee, Ministry of Health, Saudi Arabia, Meetings, Organization and Management.

INTRODUCTION
PTC is demandable running of a hospital effectively. In the beginning, there was not any concept drug committee, but with the progress of time, the need for starting an active PTC is increasing. In the PTC Committee, the pharmacist, physicians and nurses play an essential role, in addition to the presence of an administrative.[1,2] For running a better PTC, not only the expenditures, but also the actively participating members, frequently organized the meeting and clear agenda is also a must. In the study of Improving the performance of Drug and therapeutics committee (DTC) in hospitals–a quasi-experimental study in Laos concluded that continuous self-monitoring of performance using indicators and feedback discussions, is the means of improving the performances of the DTC.[3] In 1999, the study of the Activities, functions and structure of pharmacy and therapeutics committees in large teaching hospitals, concluded that the Committee meetings and policies and procedures. PTC in the responding hospitals functioned formally. The meetings were reported to be official gatherings with a prepared agenda (supplemented in many hospitals with review materials). Almost all respondents reported that committee minutes were generated immediately after the meeting, with most hospitals requiring the approval of the minutes by the committee before they were issued. PTC met regularly, with an average of 9.7 meetings per year. The meetings averaged more than an hour.[2] The study of the characteristics of pharmacy and therapeutics committees in Saudi hospitals shows that adopting PTC in Saudi governmental hospitals is a common practice Only 9 (45%) of the committees distribute the agenda of meeting to their members 6 days or more before the meeting date. The average number of meetings is 12 meeting per year. The average number of drugs deleted or added to the formulary is 6.3 and 19.2 drugs per year.[4] As every hospital should establish a multidisciplinary pharmacy and therapeutics committee or equivalent to provide oversight of the hospital formulary and

medication use.[5,6] Unfortunately, not all the PTC is working efficiently. This study aims to explore the organization and management of the meeting of the Pharmacy and Therapeutics Committee at the MOH hospitals in KSA.

METHODS

This is a 4-month cross-sectional national survey of PTC at MOH hospitals in Saudi Arabia. The survey consisted of two parts: the first part collected demographic information and the second part consisted of 93 questions divided into four domains: domain 1: scope, structure and responsibilities; domain 2: formulary management system; domain 3: evaluation of drug formulary and decision-making; and domain 4: organization and management of committee meetings, which includes leading meeting discussion of PTC, the responsibility of preparing meeting agenda of PTC, the responsibility for monitoring activities or assignments, number of PTC scheduled meeting annually, number of PTC held meeting annually, duration of PTC meeting (hours), number and class of medications evaluated by the PTC monthly, assessment of PTC meetings and the barriers of PTC policy implementations. This survey was derived from previous literature, local regulation and ASHP standards of PTC and formulary system.[1,2,5-8] The 5-point Likert response scale system was used with close-ended questions. The survey was distributed to 50 drug information centers at the MOH hospitals. Hospitals of all sizes/capacity or any type of specialty were included in the study. The survey was prepared in an electronic format and it analyzed the organization and management of committee meetings through Survey Monkey system.

RESULTS

A total of 50 drug information centers responded to the questionnaire. Of them, 48 (96%) were Saudi and 2 (4%) were non-Saudi centers. There were 16 (32%) female and 34 (68%) male responders. Most of the responders had Bachelor Degree in Pharmacy (23 (46%)), followed by Diploma in Pharmacy (10 (20%)) and Master of Clinical Pharmacy (9 (18%)) with an experience of more than 3 years as the pharmacist (45 (90%)). The majority of the responders were PTC members (21 (43.8%)) and vice-chairman (15 (31.3%)) with a duration of 1–6 years (64%) in PTC membership (Table 1). The majority of the responders were from hospitals with 100–299 beds (28 (56%)) with accreditation obtained from CBAHI (33 (66%)), Saudi Commission of Health Specialties (15 (30%)) and Joint Commission USA (13 (26%)) (Table 2). Chairman of the committee leads the discussion in the PTC (29 (58%)), followed by

Table 1: Demographic information regarding responder's qualifications.

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 P&T 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 P&T 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	

Table 2: Demographic information of hospital.

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: Leading discussion during meeting by PTC.

Answer Options	Response Count	Response Percent
Chairman committee	29	58.0%
Chief of Pharmacy	13	26.0%
Chief Drug information Center	3	6.0%
Drug information (DI) pharmacist	2	4.0%
Secretary	2	4.0%
Shared leadership	0	0.0%
Medical director	1	2.0%
answered question		50
skipped question		0
The responsibility of preparing meeting agenda of PTC		
Answer Options	**Response Count**	**Response Percent**
Secretary	15	30.0%
Chief of Pharmacy	22	44.0%
Chief of drug information center	4	8.0%
Drug Information Pharmacist	3	6.0%
Chair of committee	4	8.0%
Coordinator of P& T committee	2	4.0%
answered question		50
skipped question		0
The responsibility for monitoring activities or assignments		
Answer Options	**Response Count**	**Response Percent**
Secretary	11	22.0%
Chief of Pharmacy	20	40.0%
Chief of drug information center	6	12.0%
Drug Information Pharmacist	2	4.0%
Chair of committee	11	22.0%
Other	0	0.0%
answered question		50
skipped question		0

Table 4: Number of PTC scheduled meeting annually.

Answer Options	Response Count	Response Percent
1-4	18	36.0%
5-8	16	32.0%
9-12	15	30.0%
> 12	1	2.0%
answered question		50
skipped question		0
Number of PTC held meeting annually		
Answer Options	**Response Count**	**Response Percent**
1-4	31	62.0%
5-8	7	14.0%
9-12	12	24.0%
> 12	0	0.0%
answered question		50
skipped question		0
Duration of PTC meeting (hours)		
Answer Options	**Response Count**	**Response Percent**
1	28	56.0%
2	20	40.0%
3	1	2.0%
> 3	1	2.0%
answered question		50
skipped question		0

Chief of Pharmacy (13 (26%)) and Director of Drug Information 3 (6%). Head of the pharmacy prepares the meeting agenda (22 (44%)), followed by Secretary (15 (30%)) and Chief of the Drug Information Center (4 (8%)). Head of the Pharmacy is responsible for the monitoring activities (20 (40%)), followed by Chairman of the Committee (11 (22%)) (Table 3). The number of scheduled meetings per a year 1-4 was 18 (36%) with a duration of 1-2 hrs (48 (96%)). Medication for infectious diseases were the majority class sold (26 (52%)), followed by cardiovascular medication (21 (42%)) (Tables 4 and 5). The statement with scores on preparation of agenda from before the meeting to the final distribution was 4.28–4.62. The most challenges of PTC recommendation implementation was a lack of resources (37 (74%)), lack of hospital administrator support (23 (46%)) and lack of pharmacist role (18 (36%)) (Tables 6 and 7).

DISCUSSION

The first PTC was established almost more than 30 years ago and most of the PTCs at

Table 5: Number of medications evaluated by the PTC monthly.

Answer Options	Response Count	Response Percent
< 1	7	14.00%
1	19	38.00%
2	12	24.00%
3	11	22.00%
4	5	10.00%
5	3	6.00%
6	0	0.00%
7	0	0.00%
8	0	0.00%
9	0	0.00%
10	1	2.00%
answered question		50
skipped question		0

In the past 12 months, The type of medications discussed at Pharmacy and Therapeutic Committee meeting

Answer Options	Response Count	Response Percent
Gastro-intestinal system	15	30.00%
Cardiovascular system	21	42.00%
Respiratory system	13	26.00%
Central nervous system	22	44.00%
Infections	27	54.00%
Endocrine system	7	14.00%
Obstetrics disorders	5	10.00%
Gynecology disorder	11	22.00%
Urinary-tract disorder	11	22.00%
Malignant disease	3	6.00%
immunosuppressant	10	20.00%
Nutrition and blood	0	0.00%
Musculoskeletal and joint diseases	5	10.00%
Eye disorder	11	22.00%
Ear, Nose and Or pharynx	3	6.00%
Skin disorders	5	10.00%
Immunological products and vaccines	1	2.00%
Anesthesia	10	20.00%
answered question		50
skipped question		0

Table 6: Assessment of PTC meetings.

Answer Options	Always	Often	Sometimes	Rarely	Never	Rating Average	Response Count
Agenda prepared before meetings	37	10	0	3	0	4.62	50
Meeting minutes always generated after committee meetings	29	10	8	2	1	4.28	50
Review materials attached to agenda	26	16	6	2	0	4.32	50
Meeting minutes receive final committee approval before issued	27	12	8	0	1	4.33	48
answered question							50
skipped question							0

Table 7: The barriers of PTC policy implementations.

Answer Options	Response Count	Response Percent
Lack of resources	37	74.0%
Lack of hospital administration support	23	46.0%
Lack of Pharmacy staff	14	28.0%
Low Pharmacy and Therapeutic Committee profile	13	26.0%
Lack of pharmacist role	18	36.0%
Conflict with pharmacy policy	10	20.0%
Lack of cooperation between PTC committee and always fill the agenda by discussion title for SBAHI only	1	2.0%
answered question		50
skipped question		0

MOH hospitals were founded during the previous pharmacy strategic plan (2002–2010). There were goals and objectives and policies and precedencies of addition and deletion of medication from MOH drug formulary. The corporate PTC was updated during the period of 2010-2015. For any hospital to work effectively, the PTC is a must. Although previously, this concept did not exist in hospitals, with the passage of time, there is a tremendous need for such PTCs and now it has been compulsory in hospitals throughout the world. The hospitals which lack the committee suffer economically. Because of the presences of such a large number of drugs, the inventory increases while the turnover rate decreases. This happens because of the absence of PTC.[4] The national drug information center coordinate with all drug information centers during the follow-up of regional and peripheral PTC. All PTCs should organize meetings annually, prepare the agenda and lead the discussion during the meeting. In this study, our findings showed that the pharmacist mostly prepared the agenda for discussion followed by the secretary. This may be because the pharmacy had an active role in the PTC[9] and the secretary has a minor job in the committee. While the drug information pharmacist seldom had the involvement in the preparation of the agenda with unclear reason. The responsibility of preparing the agenda was with secretary and head of the pharmacy, which was similar to a previous study, whereas

the agenda should be prepared by the chairman and the secretary.[8] However, the chairman and his secretary should follow-up the committee activities implementation. In our findings, the number of scheduled meetings were 8 per year, whereas the number of meetings held was 1–4, which was similar to a previous study[9] and lower than other studies because the PTC was not well organized and developed at MOH hospitals of other countries.[8,10-11] That half of the planned meetings held was not done in the practice. The majority of hospitals had a meeting with the duration of 1-2 hrs, which was similar to a previous study.[8] The average number of PTC meetings was 4-8 annually only. The number of meetings below the standard number with short time for implementations of PTC activities. As a result, the agenda of the meeting will be very short and not very useful. The number of medications discussed annually was 7–19 with an average 13 per year, which was similar to a previous study.[12] Lead to five medications per meeting and four meetings per a year. In the meeting, the pharmacy does not lead the discussion, whereas the chairperson of the committee mostly leads the discussion. The main pharmacy was busy with the administration job of the PTC rather than scientific preparation of the agenda. The most type of medications discussed in the PTC meeting was infectious diseases, cardiovascular diseases, CNS, or GIT medications. That is related to the most of the committee membership was from medical adults specialty. Several medical specialists, including pediatrics, critical care and emergency, should be involved in the committee to improve the performance of the PTC. According to our results, there are several challenges opposing the PTC function and organization, including the lack of resources which high demand during in the PTC meeting. The PTC lacked the administration support, which may be related to the performance or action plan which is not supported by the higher administration and might be due to the failing of the action plan implementation in the hospital practice. Unfortunately, the role of the pharmacist, including that of the clinical pharmacist, was lacking in most of the responded hospitals, which may be short of pharmacy staff or shortage of qualified specialized clinical pharmacist. The organization of the meeting by the PTC and planning the agenda with pharmacy performance should be improved through an increasing number of clinical pharmacist delivering education and training to those who are working with PTC. Moreover, hospital administration should support the PTC through financial support with clinical resources and activate the action plan of the committee. Regular survey about the organization of the PTC at MOH hospital is highly recommended in the KSA.

CONCLUSION

The organization of meeting by PTC at MOH hospitals is not appropriate. PTC lacks resources and administration support. The clinical pharmacist role was missing in the PTC in functioning. Review of PTC requirements and plan is required to improve the activities and performances of PTC. A regular survey of PTC meeting and organization is highly recommended at MOH hospitals in the KSA.

ACKNOWLEDGEMENT

None.

CONFLICT OF INTEREST

None.

ABBREVIATIONS

PTC: Pharmacy and therapeutic committee; **UK:** United Kingdom; **MOH:** Ministry of Health; **DTC:** Drug and therapeutics committee; **CNS:** Central nervous system; **GIT:** Gastrointestinal; **KSA:** Kingdom of Saudi Arabia.

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