

CHAPTER 4

DISCUSSION AND CONCLUSION

This study was a study of the quality of dispensing services for OPD patients of the Community Pharmacy Department, Banprak Hospital in order to evaluate how well the current service system is and how the quality of the service system is improved after implementing the continuous quality improvement (CQI) in the development activities. The quality measurement of this study employed 6 key performance indicators in evaluating the OPD patient services including waiting time, satisfaction level, percentage of receiving and understanding drug use instructions, shortage of drug supplies, percentage of pre-dispensing errors, and incidence of dispensing errors.

The first phase of this study involved pre-evaluation of the current situation according to all 6 key indicators. After that the project team selected the aspect that required urgent improvement to develop first by using an attribute rating map and consensus as the tools for prioritization. The percentage of patients receiving and understanding drug use instructions was selected to be improved first as its current situation was not up to standard and it was found that the patients mostly see the importance of this aspect. This study was therefore named “the development of dispensing service and drug detailing system for OPD patients”. After that the quality development activities using CQI system were implemented for a period of 9 months resulting in significant outcomes as follows:

1. In terms of personnel who provided instructions.

The system was adjusted so that a pharmacist could dispense medicines and provide instructions and advice to the patient him/her self. In addition, a standard manner in provision of primary information was set up so that there was consistency in dispensing medications and in providing instruction for patients (WI.PHA.05). Moreover, the evaluation by informally talking with the staff in the Department found that the staff was satisfied with the new work system as they could visualize and understand it clearly as well as knowing what information to be provided to the patients. However, there was a request for additional data on a normal lab value. For this matter, the pharmacist had liaised with the patient care team (PCT) for the lab to report a normal value in conjunction with the lab test result and for a doctor to write the interpretation of the result or a clear diagnosis of diseases. One of the patients being interviewed stated, "Before knowing the result of the blood sugar test, I could not completely understand or remember the instruction. However, after the doctor said that the blood sugar level has increased from that level to this level, the doctor then has increased the dose from this to that. It is easier to remember".

2. In terms of factors related to treatment cooperation

- Quality policies were set up among co-professional teams for coordination in order to provide information for the patients correctly and for them to better perceive and understand medication instructions from the Community Medicine Department as follows:
- The policies in delivery of patient medical records to the dispensing unit.

- The policies in writing ↑ or ↓ in front of the name of the medicine whose dose has been adjusted by a doctor.
- The policies in writing information about problems found in a particular patient in his/her medical record.
- Coordination standard in cases of there is:
 - a problem with not understanding a doctor's prescription.
 - a problem that a patient could not comply with a doctor's instruction.
 - a problem with ADR/ Drug Interaction of the prescribed medicines.

An example of the benefits gained from the co-professional teams was detailed in the following. A Thai female patient with age of 30 years old came to see a doctor with a symptom of abnormal odour in the nasal canal. The doctor diagnosed with infection in the nasal canal and prescribed Amoxycillin for intake. When the medical record of the patient arrived at the dispensing room, it was found that the patient came for treatment of the same symptom 2 weeks ago and had been prescribed with Amoxycillin. Additional questioning about medical history of the patient found that the patient also received the same medicine at the public health center after taking the first batch of medicines from the hospital for 7 days but the symptom still persisted. This information together with observation during talking with the patient indicated that the patient was very worried and would like to undergo x-ray examination of her nasal canal. She did not want to take any more Amoxycillin as the symptom was not better after 2 weeks of taking the drug. The pharmacist, therefore, informed the doctor about this matter and the doctor then prescribed a new drug, which was Roxithromycin and explain to the patient to try taking the new drug. If the symptom still persists, the doctor

would do x-ray examination for her. By all means of explaining and talking to the patient, she was still very worried. The pharmacist then asked additional questions “Since when did you feel that the nasal canal developed bad odour? And was there any suspicious incident related to this symptom?”. The patient thought over for a while and answered, “Actually, nothing happened. After I came to fix my teeth at the hospital last time then I felt this symptom”. The pharmacist then performed another important role by coordinating with the dentist and asked about a possibility of problems within the oral canal that led to the bad odour of the nasal canal. There was well collaboration from the dentist and the patient was satisfied (At least it was better than trying to take the medicine for another week). Finally, it was found that the patient had problems with her month canal and the dentist then referred the patient for treatment in a suitable hospital afterwards. It can be seen from this case study that even through it was only drug dispensing and detailing relevant instructions to the patient, if the patient was completely looked at and taken care of by support of the health care team (co-professional team), the maximum benefit would truly belong to the patient.

3. The systems that supported instruction provision for the patients to be effective included:
 - Computer programs that could completely provide details of necessary information on the label for the patients and their relatives to read easily and clearly. In addition, there should be full details of the received date, name of the medicine, quantity, use instructions, and special recommendations such as, antiseptics should be continuously taken until finishing the entire batch. Those details would be beneficial to the

patients in terms of perceiving information about their illness. The patients were able to know the type of medication prescribed by the doctor and the type of diseases that the drug treats. When they needed to go for treatment at different healthcare providers, they could show the labeled bag to the doctor there. The doctor then could perform treatment for the patients continuously. Most patients stated, "It is very good that the label provided full details. If I forget, I would come to read it again".

- Leaflets facilitating in providing details about the drugs that required special use instructions such as suppository medicines, eye drops, and Inhaler
- Dispensing service counters that facilitate good interaction between the staff and the patients, as there is no blockage leading to two-way communication. Patients are allowed opportunities to ask questions for better understanding about drug instructions. According to the observation, the patients had more courage to ask questions in cases that they did not know or were unsure. In cases of elderly people who could not read a small letter clearly and had no relatives to read for them, they would ask the staff to write drug details with biggest size possible on the drug bags. Informal interviews with the patients found that most patients preferred dispensing services using a counter to that through the conventional system, "The previous system was exhausted, having to listen through a small and narrow window. Sometimes I could not hear clearly but do not know what to do"

- Focusing on good service practices and the “CLOSER” principle in detailing drugs. There were also meetings to explain such principles to all personnel within the department to understand and implement.

4. In terms of dispensing error

Additional to recording the frequencies of pre-dispensing errors and dispensing errors, the project gained advantages from development of the computer system of OPD dispensing services that allowed possibility of keeping another data such as drug interaction. In typing a label for any prescribed drug if different drugs being prescribed at the same time could interact, for example, drug A could reduce absorption of drug B, the computer program would show such reaction together with recommendations. Pharmacists or relevant staff then can discuss such issue with the doctor for the benefit of the patient. In 2001, 462 cases of drug interaction were found from a total of 39,357 prescriptions. Sig.code 1 and 2 was the mostly found reaction. Some negative effects were considerably serious conditions and the responsible doctors were consulted in every case so that the patients received the best advice possible. In the case of Sig.code 3 and 4, the pharmacist would be in charge of providing advice for the patients such as on suitable time for intake different drugs that could undergo interaction. The most commonly found Sig.code 1 reaction was between Propranolol-Cimetidine with a frequency of 25 times. And the most common Sig.code 2 reaction was between Diazepam-Cimetidine with a frequency of 36 times. The most commonly found drug interaction was of Sig.code 3 between Propranolol-Aluminium Hydroxide with a frequency of 98 times. For all cases, well coordination was received from the responsible doctors.

5. In terms of key quality indicators

The study found the quality of the Community Pharmacy Department's services according to such key performance indicators before and after implementation of CQI quality development activities as Table 4.1.

Table 4.1: the quality of the Community Pharmacy Department's services according to such key performance indicators before and after implementation of CQI quality development activities

Key indicators	Pre-CQI	Post-CQI
Percentage of patients receiving and understanding drug use instructions (%)		
- Drug usages (Indication)		
- Not receiving information	7	0
- Receiving but not understanding	14	3
- Receiving and well understanding	79	97
- Dosage and administration of the drug		
- Not receiving information	0	0
- Receiving but not understanding	15	5
- Receiving and well understanding	85	95
- Cautions and Adverse effects of the drug		
- Not receiving information	20	32
- Receiving but not understanding	22	0
- Receiving and well understanding	58	68
- Routine practices		
- Not receiving information	34	54
- Receiving but not understanding	6	0
- Receiving and well understanding	60	46
Waiting time/ time spent in detailing the drug for a patient	3.3 min/ 42 sec	5.0 min/ 2.4 min
Incidence of dispensing error	2 times	None
Incidence of drug supply shortage	5 times	None
Pre-dispensing error (%)	2.2	2.3
Overall satisfaction level (%) (Excellent/Good/Fair)	14/ 67/ 19	51/ 42/ 7

According to Table 4.1, review of the overall 6 key indicators indicated that improvement of drug advice provision to the patients for their better understanding of such advice involved development of the dispensing system that enabled the patients to better receive and understand drug instructions. For example, there was an increase of patient percentages receiving and understanding advice from 79 % to 97 % on the topic of “drug usages”, from 85 % to 95 % on “doses and use instructions” and 100 % of the patients had received the information on both topics. In terms of the information on “cautions and negative side effect of drugs”, the percentage of patients receiving and understanding the advice increased from 58 % to 68 % and there was no patient receiving but not understanding the advice. In terms of the information on “medication practice”, the percentage of patients receiving and understanding the advice decreased from 60 % to 40 % with no patient receiving but not understanding the advice.

However, for the later two topics, percentages of patients not receiving the information increased from 20 % to 32 % and from 34 % to 54 % respectively. This might be because the patients picked up by the random interview were not chronic patients so no such information was provided to the patients. In addition, the result indicated that the overall satisfaction at excellent level increased from 14 % to 51 %. Moreover, the clear and systematic work instruction on dispensing process that required the staff to check more details of the prescription and the drugs. Pre-dispensing errors were found to increase from 2.2 % to 2.3 % while none of dispensing errors and incidence of drug supply shortage was found. However, development outcomes of the drug detailing system had an effect on the waiting time. An increase in the mean

detailing time from 42 seconds to 2.4 minutes had led to an increase in the time period the patients needed to wait for services from 3.3 minutes to 5.0 minutes.

It can be seen that quality improvement activities began with a review of current activities whether or not they respond to the needs of the customers, then proceeding improvement and establishing standards, maintaining the standards (quality assurance), and finally conducting continuous improvement that extends to improvement of other related aspects. For the Community Pharmacy Department of Banprak Hospital, the next issue to be improved would be responding to the technical needs. That is, integrated risk assessment of medication errors. It is a professional role of a pharmacist to review prescriptions and check the drugs every time prior to dispensing. The experiences in running the CQI activities in developing the OPD dispensing service and advice provision systems found that a team is an important thing, especially the co-professional team as it greatly and mutually contributed in collaboration for the system improvement activities. In addition, assessment based solely on quantitative measurements is inadequate. It is necessary to have related qualitative data. Furthermore, it was found that quality improvement required development of systematic work process as well as development of human resources and organizational cultures to see the importance of “quality”, to be ready to learn new things, and to continuously improve the process. Since not all problems in the service system are solved within a course of a single project, the policies of quality improvement by development of work system together with development of people are considered to be critical to achieve successful outcomes of the quality improvement activities. Therefore, the CQI system was selected and adopted by the Community Pharmacy

Department for systematic and continuous development. If the Department could maintain such quality development activities in conjunction with development of its personnel team, it would not be difficult for the Community Pharmacy Department of Banprak Hospital to step into the age of pharmaceutical care services with customer focus and the quality that responds the basic needs of customers and that is based on professional standard in the near future.

Factors supported operation of this project (Strengths)

1. Culture of the organization that encouraged all staff to realize the importance of “quality” and so develop concepts and ideas for improvement.
2. The hospital policies that aimed to develop people as well as to develop the work leading to the positive attitudes of the personnel responsible for various activities. There was also modification of the organizational structure to facilitate coordination among different departments.
3. The CQI quality development activities were the activities that comprised of clear procedural steps by itself, therefore, easy to understand and to operate for continuous improvement outcomes.
4. The pharmacist was one member of the coordinator team for quality development at the hospital level so could be the advisor for the departmental team.
5. Personnel from all related professions such as doctors and nurses possessed the same primary ideas that aimed for improvement of the hospital’s quality by providing best quality services with customer focus; risk management; maintaining of professional standards; and by continuous development.

Such concepts were in accordance with the HA principles that facilitated coordination among related professions or among different departments. The PCT committee was also therefore established with a clear system for problem reviews.

Problems, obstacles and limitation

- The interviewer was a nurse who even though did not wear uniform most patients could recognize the nurse resulting in fairly good outcomes.
- The interviewers were different people for different phases. This might cause some error in the results (There were, however, provision of details and meaning for each question as well as recording the results).
- Biases of the personnel. That is, if they knew they were being evaluated, they would show higher level of enthusiasm than normal leading to deviation of the study results from the actual situation.
- Some populations needed to go back home before completion of the interview and the next person in line was moved to replace the position in the same sample group. The systematic sampling was, therefore, difficult to control.