CHAPTER I

INTRODUCTION

Background and Rationale

Pharmacist, an important professional in health care system, is responsible for the safe and effective distribution of pharmacologically active substances. Hepler and Strand (1990) stated about the heart role of pharmacists that "pharmacists are responsible for the provision of drug therapy for the purpose of achieving definite outcomes that improve a patient's quality of life". Pharmacist is not only responsible for re-checking a doctors' prescription and dispensing for the right patients but also he or she must be able to help the patients in receiving appropriate medicines. At present, there are many changes in health care system, thus Thai pharmacy professional has focused on the concept of competency, because the competency lead to the effectiveness and efficiency of work. Therefore, pharmacists are expected to maintain and demonstrate competency within their fields over the course of their professional lives. With the profession progress, role of the pharmacist has been changed at three stages; first, the traditional, or drug-distribution stage; second, the transitional, or clinical pharmacy stage; and third, the patient-focused or pharmaceutical care stage (Wiedenmayer et.al, 2006).

Many changes have occurred in health care system, such as demographic and society shift, changes in health care's structure and delivery, changes in hospital accreditation, and changes in the funding of health care services. However, Educational curricula do not always keep pace with the rapid changes in health care system. The 1998 report of the Pew Health Professions Commission has been a wake-up call to all members of the health professions including pharmacy. It has proposed that health care is changing at a faster rate than expected and this report predicts that professions that do not adjust accordingly may find no function in the future health care schema (Scott, Miller, Letcher, 1998).

In order to cope with these ongoing changes, the curriculum is one key factor to improve the graduate's competency. Kapol (2006) evaluated the curricula content based on the pharmacy competency standards and revised the competency standard. She recommended that the future study should conduct a competency-based

curriculum and based on the high expectation from the pharmacists, Thai pharmacy school should revise their curriculum periodically. In addition, there are some complaints from society about pharmacist competency; the pharmacy curriculum does not focus on producing a specialized pharmacist (Ningsanon, 2006). The current curriculum produces both product-oriented and patient-oriented pharmacists. However, due to the variability of the pharmacist's role and practice settings renders it is difficult to assess pharmacists' abilities to perform all aspects of the pharmacist's role and to apply clinical knowledge in different practice settings.

With all of these reasons, pharmacists are now facing with more challenge in pharmacy competency and how to improve their roles and competencies in the eye of the public. In response to this stimulus school of pharmacy should revise their curriculum in order to produce well-educated pharmacists to meet the clinical needs of patients and society (Hancox, 1982).

In Thailand, there have been also many changes of pharmacy education (Pothiyanon, 1998). From 1914 to 1935, the first stage was focused on drug-distribution pharmacy curriculum which was set 3 years to complete the pharmacy program. In 1941 and 1957, the pharmacy program was expanded to a 4-year and then later to a 5-year undergraduate pharmacy program. At present, many Thai pharmacy schools have expanded to a 6-year doctor of pharmacy curriculum. However, all graduates both of a 5-year or a 6-year program have to take the same licensure examination according to the pharmacy competency standard guideline. For the Faculty of Pharmaceutical Sciences, Chulalongkorn University, there also have been many transitions in pharmacy curriculum. From 1939 to 1956, undergraduate pharmacy students were required 4-years to complete curriculum. In 1956, the curriculum was expanded to a 5-year program and later on the revision in the year 1994, the semi-specialized curriculum was conducted. At that time, there are five major semi-specialties; Clinical and Hospital Pharmacy, Pharmaceutical Technology, Research and Pharmaceutical development, Community Pharmacy and Pharmacy Administration, Public Health in Pharmacy. In 2000, pharmacy curriculum was revised again, the five semi-specialties was reduced to three major semi-specialties; Pharmaceutical technology and development, Clinical pharmacy, and Social and administrative pharmacy. The final revision in 2004, there was a little change in the

professional courses. The current pharmacy practice has changed its focus from dispensing drugs to providing clinical care for patients.

In the past the pharmacy curriculum development did not focus on the desire or expectation of their pharmacist's customers/stakeholders and thus did not correspond to the society's needs. This research, therefore, is aimed to develop a new pharmacy curriculum to best fit the stakeholders'needs. This study was mainly based on the complete needs assessment concept, consisting of needs identification, needs analysis, and needs solution. First, to identify the competency needs, we used the pharmacy competency standard to obtain the level of actual performance and the level of pharmacy expectation. Second, the results of competency needs were compared with the other studies Third, needs solution was generated, by applying the quality function deployment (QFD), a new concept on the needs assessment scene (Altschuld and Witkin, 2000), in designing pharmacy curriculum.

Quality function deployment is a management technique. It is used as a tool to quantify customer needs and reflect these needs as requirement through the product design and manufacturing process. In product design, QFD relates the product performance requirements of the customer with technical design characteristics through a matrix known as "the house of quality." This mapping of "whats" (product or customer specifications) to "hows" (technological features) quantitatively measures technical characteristic priorities. In this process, QFD promotes organization consensus building and decision making (Cohen, 1995). Denton, Kleist and Surendra (2005) suggested that QFD may be useful in curriculum and course design. This technique can be benefit in overcoming resource constraints while delivering rich and deep courses within a well-designed curriculum.

Specifically our study concentrated on reform the curriculum of the Faculty of Pharmaceutical Sciences at Chulalongkorn University. The challenge of this reform was to design, implement, and assess curriculum that integrates the general and professional abilities and enables practitioners to be responsible for drug therapy outcomes and well-being of patients. The researcher therefore proposes a study toward the Doctor of Pharmacy curriculum design using needs assessment technique and quality function deployment at the Faculty of Pharmaceutical Sciences, Chulalongkorn University.

The results of this study were valuable to pharmacy schools as a model development in improving their pharmacy curriculum to achieve their undergraduate pharmacy competencies. The QFD was used to assure that a program's graduates will have skills and abilities that meet the stakeholders'needs in the need solution process.

Research Objectives

1. General Objective

To design the pharmacy curriculum in the Faculty of Pharmaceutical Sciences, Chulalongkorn University.

2. Specific Objectives:

1) To identify the competency needs by comparing the expected and current competencies.

2) To design of Pharm.D. curriculum using quality function deployment approach

Scope of the Research

1. Curriculum development consisted of 3 processes which were curriculum planning, implementation and evaluation. The process of the study scoped only in pharmacy curriculum design in the curriculum planning process and did not include the implementation and evaluation processes. The curriculum in this study was designed only the study courses did not included the course contents.

2. This curriculum was for the new pharmacy students in the Doctor of Pharmacy program, Faculty of Pharmaceutical Sciences, Chulalongkorn University.

3. This study was focus on the competency based curriculum

4. The overall credit hours of the curriculum were based on the regulations by the Higher Education Commission.

Expected Benefits

1. This study provided information about the competency level of the pharmacy graduates relative to the Pharmacy Competency Standard. The results were valuable for the pharmacy educators to know their undergraduate qualifications.

2. This study also provided new pharmacy curriculum designed by needs assessment technique and QFD.

3. The results were beneficial for human resource development. The pharmacy educators were able to propose the strategies to inculcate their students.

4. The process of developing the pharmacy curriculum using needs assessment technique and QFD can be a model development in pharmacy education. Other universities or colleges can use this process as a guide in developing their curricula or courses.

Definition of Terms

Pharmacy competency is defined as a pharmacy graduate's ability to perform professional functions. A core competency was focused in this study. Core competency refers to the minimum abilities of a pharmacist that can be demonstrated after the graduation.

Pharmacy customer is the pharmacy employer or supervisor in six working areas: industry, community pharmacy, hospital pharmacy, marketing, FDA and Regulation and university.

Pharmacy preceptor is an experienced registered pharmacist who provides support and guidance to students (pharmacy interns) during their trainings. In this study, it refers to the pharmacy practitioners who trained the students in hospitals..

Thai Pharmacy Competency Standards are a set of the minimum requirements on a pharmacy graduate's ability. The standards were developed by the Thai Pharmacy Council in 2002, including eight domains of knowledge and skills for an entry-level pharmacist.

Competency needs are the discrepancies between intended pharmacy competency and his or her performance at present. The gaps of competencies will be used to identify the prioritized problems.

Quality function deployment (QFD) is a system for designing products or services based on customer demands and involving all members of the producer or supplier organization (Akao, 1988). In this study, it meant a quality tool that helps to translate the pharmacy competency standards (VoC) into new curricula contents that truly satisfy their stakeholder needs.

House of Quality is a diagram in the form of a house that is a summary of the main aspects of the quality function deployment procedure for identifying design features with the greatest likelihood of resolving a set of needs.

The Analytic Hierarchy Process (AHP) is a method to help people make better decisions in complex situations involving trade-offs between two things such as the advantages and disadvantages. It used in this study to help the respondents make decision in judging the importance trade-offs between competency domain

QFD team is the group that oversees the conduct of the needs solution phase using QFD. They will develop the curricula contents from the competency needs.

Credit hour is equivalent to either 15 hours of lecture or 45 hours of laboratory

Curriculum is defined as an educational plan which is designed to assure that each student achieves well-defined performance-based abilities (Abate, Stamatakis, Haggett. 2003).

Domain or unit of competency is the requirements required of a pharmacist in order to perform good pharmaceutical tasks.

Competency or elements of competency is a competency in performing each task distributed into activity or sub-procedure according to various aspects of knowledge, skill and attitude composition.

Sub Competency is also referred as performance criteria

Activities or behavior indicators is a behavioral objective to determine a desired expression.