CHAPTER III

METHODOLOGY

3.1 Study Design

This was a descriptive cross-sectional study. Still, correlation between independent and dependent variables was done for the sake of analytical conclusions. Data collected was both quantitative and qualitative.

3.2 Target Population and Study Population

The target population for the study was all CUP board members i.e. the CUP Director and other members. The study population was all CUPs in Ayutthaya Province.

3.3 Study Site

Ayutthaya Province is located 75 Kms North of Bangkok. Ayutthaya Province covers an area of 2,557 square Kilometers. There are 16 Districts, 209 sub-districts, 1,468 villages, 27 municipalities, and 133 sub-district administration organizations (See Ayutthaya Map in Appendix 3). Ayutthaya has 744,862 inhabitants with an average of 46,554 inhabitants per district. Health care services are provided by both public and private sector. (PHO, 2002) In the public sector, there is one Provincial Health Office (PHO) and 16 District Health offices (DHO). Health services are

provided by one regional and one general hospital with a bed capacity of 416 and 160, respectively and by 14 community hospitals ranging from 10 to 60 beds. There are 161 PCUs and 52 Health Centers. In the private sector, there are 3 hospitals, 148 clinics, and 116 drug stores. In total (public and private sector) there are 165 physicians, 40 dentists, 78 pharmacists, 895 nurses (RN), and 396 community health officers. There are a total of 16 CUPs in Ayutthaya Province. Under the UCS, 39% of the population has Gold Card 1 (free of charge), 29% have Gold Card 2 (pay 30 Baht), 18% have SSS-insurance, 8% are covered by CSMBS, and 6% are not registered (PHO, 2002).

Ayutthaya Province was selected because it had logistic advantage of being not too far from Bangkok. Facing constraints of time and funding, Ayutthaya Province had other advantages such as being geographically rather small and all districts could be reached easily because it has evenly distributed infrastructure. In addition, the PHO was interested in the study results as basis for strategic planning of CUP capacity building.

3.4 Sampling

The sample unit was the Contracting Unit for Primary Care (CUP). The province of Ayutthaya was chosen systematically. Studying CUPs only in one province eliminated to a larger extent the influence of the PHO as a major factor of CUP management performance. At provincial level all CUPs in all the 16 districts were selected. The total sample size was 16 CUPs.

3.5 Data Collection

Quantitative and qualitative data was collected. Qualitative data was collected by an in-depth interview with the CUP-management director or the deputy in all the 16 CUPs using a semi-structured guide. Some information was cross-checked by direct observation using a checklist.

In addition socio-demographic information on actors, their qualification, and opinions was collected using a self-administered structured questionnaire distributed to and filled in by five members of the CUP who were available on the day of the interview. All data collection instruments are shown in Annex 4. They are:

a) A structured questionnaire, which was administered to CUP members. The questionnaire was pre-coded and pre-tested before the actual data collection. During data collection the principle investigator (PI) was around to clarify any issues that came up.

b) Basic data about the district was collected using an information sheet which was filled in by the CUP members. Information collected included: total population, population registered under the UC, and list of CUP members, the profession and position in the CUP.

c) Semi-structured questions with details of CUP management system's, functions, and structures was used in an in-depth interview in each CUP. The in-depth interview was held with the CUP director or the deputy.

    d)   Observation technique using a prepared checklist with items like availability of written plans (master plan, POAs), job descriptions and set of reports.

Questionnaires

A professional translator translated both the structured and semi-structured questionnaires from English to Thai. A second translator translated back to English to check for clarity of wording. Ten copies of the Thai-questionnaires were distributed for testing to CUP team members, outside Ayutthaya Province, to assure the understanding of the questions before finalizing the questionnaires.

Interviewers

The principle investigator (PI) trained one senior Thai speaking interviewer who collected the data. The selected interviewer had management experience. The PI explained the objectives of the study and the research tools used. The interviewer was also trained on how to verify completeness of responses in the questionnaires in the field as well as how to do the in-depth interviews. One pilot survey and interview was done together with the researcher (in Thai but translated to English language), to test the clarity of the questionnaire. After adjustment of the structured and semi-structured questionnaires, the team proceeded with the data collection in all the districts. On average one CUP was surveyed and interviewed in one day using local transport and therefore fieldwork took 16 days.

Testing of the Questionnaires Validity and Reliability

The research design as well as the variables selected aim at ensuring that the conclusions of the study are valid and reliable.

Validity: After the draft questionnaires were developed, two experts' opinion was sought for revision of the instrument to assure that the questions measured what was proposed to be measured. This process ensured the content validity of the questionnaires.

Reliability: The questionnaires were pre-tested twice to assure that they produced the same findings under the same circumstances. The interval between the two pre-tests was one week.

3.6 Measurements

There were 12 sets of variables to be measured. These included independent variables related to factors that influence management performance in CUPs and dependent variables related to the appropriateness of CUP-management performance (structure and functions). The measurements are in nominal, ordinal, and ratio and the main statistics are frequencies, means, and percentages.

3.6.1 Factor that influence CUP-management performance

In order to measure factors that influence management, five variables with 16 questions were used. Each variable was given a total score in relation to a standard of "appropriate management" which was set for this study based on WHO recommended District Health Management standards (WHO, 1988), in addition to internationally

recognized principles of appropriate management. The socio-demographic data – age, gender, basic professional qualification, current position in the CUP, and tasks performed, was used to describe the respondents' characteristics. Each of the five factors influencing management was measured by asking 1-4 questions. For each question a number of points were allocated ranging from 0-8 points.

The following are the independent variables measured as well as the indicators:

1) *Management training of CUP team members*: included management training courses attended and length of the training(s).

2) *Previous management related work experience:* indicators were managerial positions held prior to the current position in the CUP, the actual position, length of time in the position, and main management tasks performed in the position.

3) *Availability of management advice:* indicators were availability of written guideline for management of CUPs or other sources of management advice.

4) *Autonomy in decision making:* indicators included degree of authority for the CUP to 1) move staff within the CUP network, 2) hire staff from outside the district, 3) decide on staff incentives, and 4) percentage of capitation budget that the CUP has authority to decide on spending.

5) *Support by key actors:* indicators were degree of technical, financial or moral support give to the CUP-management by Provincial Health Office, District Health Office, Tambon Administrative Organization, and the target community.

3.6.2 Appropriateness of CUP-management performance

In this study, appropriate management was measured using six variables with 30 questions in a self-administered questionnaire and one in-depth interview. The six management functions investigated were CUP management structure, planning, delegation of responsibility, human resource management, financial management, and monitoring and evaluation. The performance for each function was measured by applying 3-7 criteria. For each criterion, a number of performance points were allocated ranging from 6-10 points. Differences between the importance of the functions were acknowledged by weighing the achieved amount of points through multiplication. The totally achievable points were 51 per respondent. A CUP scoring less than 70% of possible points is considered as having inappropriate management in support for family medicine and rational use of primary care.

In general appropriate management is the style and procedures of management that respond to tasks and the corporate culture of an organization. In the context of establishing complex social services such as holistic primary care in districts with increasing autonomy of local authorities and awareness of communities, appropriate CUP management is supposed to have the following features: 1) participatory leadership style, 2) transparency in decision making and financing, 3) participatory delegation of tasks and responsibilities, 4) involvement of communities and

cooperation with local authorities, 5) self-organized continuing manpower development, and 6) participatory system for monitoring and evaluation.

The following were the dependent variables with their measurement indicators:

1) *The CUP structure:* indicators were availability of a CUP management team, number of CUP team members, responsibility sharing e.g. who the director is for CUP, DH, PCU in the DH/CH, how often the team meets, availability of minutes for meetings held.

2) *The planning process:* was measured by availability of a strategic plan for the CUP-management and a plan of activities, number of years of the strategic plan, and degree of participatory approach in developing the plan(s).

3) *Delegation of tasks and responsibilities:* indicators were availability of job descriptions for the CUP-management members and authority for PCUs/HCs to decide and calculate demand for drugs.

4) *Human resource management:* indicators were availability of staff incentive system, continuing education programs organized in the district by the CUP, type of program organized, and the number of staff enrolled in the current program(s).

5) *Financial management:* indicators were transparency on CUP budget, how PCU/HC budget is calculated, knowledge of capitation budget for 2005,

knowledge of population registered in the CUP under UC, and percentage of the capitation budget that the CUP gives to the PCUs/HCs.

6) *Monitoring and evaluation:* was measured by availability of annual reports by CUP and PCUs/HCs, number of CUP support visits to PCUs/HCs in the last six months, availability of visit schedule and visit reports, and CUP performance evaluation.

3.7 Ethical Considerations

The PI requested clearance from Provincial Chief Medical Officer (PCMO) and from the Director of Preventive Medicine in the PHO. Seven days before the actual interviews, all CUP directors were informed by letter and phone calls about the interview as well as the methodology to be used.

The PI/interviewer obtained oral informed consent of the respondents as well as the interviewees. The interviewer explained who would use the data and for what purpose, the access to the information as well as the role of the researcher. The PI/interviewer explained that there was a fair chance that the findings of the study would result in interventions which lead to more efficient management and higher job-satisfaction. All data obtained was treated confidential.

3.8 Limitations of the Study

1) The findings of this study cannot be representative or generalized for CUP-management performance in the whole country because the sample

size per CUP is too small and the findings are confounded by the influence of one PHO.

2) There could be a selection bias of respondents. The CUP members who volunteered to answer the questionnaires could have been the better ones in management and therefore more willing to volunteer for the survey.

3) The appropriateness of the CUP management was judged indirectly through the respondents' answers and opinions about the management functions in their respective CUPs. Since there were diverse opinions even within the same CUP- management the accuracy of the finding is limited.

4) Since one province was selected for the study, comparison between provinces was not possible.

5) Due to limited time, confirmation of answers by observation was not done in 40% of the interviews. Another limitation was language barrier. The PI was not a Thai speaker and hence she had to use trained interviewer. This limited her ability to interact freely during data collection.

6) It was not possible to draw conclusion on the effectiveness of management because time constraints did not allow measuring effects of the management on health service performance.

3.9 Data Analysis

The PI collected data with the help of one assistant. Data was verified in the field for completeness and clarity. The quantitative data collected was entered into SPSS version 13.0. Double data entry was done to ensure integrity and accuracy of the data. Summary statistics were analyzed and presented in tables and figures (Chapter IV). Findings from the in-depth interview were interpreted and validated with the quantitative information gathered. The statistics used for data analysis were:

Descriptive statistics including frequencies, means, percentages and standard deviation were used. Inferential statistics involved correlation to find out if there was an association between factors influencing management performance and the appropriateness of CUP management performance. Test of association between autonomy in decision-making, and support by different actors, qualification of staff and appropriateness of CUP management were done. Management performance was compared to WHO recommended District Health Management standards (WHO, 1988), in addition to internationally recognized principles of appropriate management.

In addition, management performance with regard to each management function was analyzed in order to describe the main strengths and weakness and propose specific measures to improve CUP management performance. The definition of the strengths and weaknesses was as specific as possible in order to identify appropriate solutions.