CHAPTER 5

CONCLUSION, POLICY IMPLICATIONS, AND RECOMMENDATIONS

This chapter consists of conclusion, policy implications, limitation, further studies, and recommendations of the study.

5.1 Conclusion

This study is the starting point intended to study the utilization pattern of mammography screening that can provide the high-risk women and equitable or not. In addition, the information of the cost and revenue of mammography screening should be examined that the hospital can recover the cost in order to achieve the efficiency, equity and cost containment.

The objectives of this study are to describe the factors influencing the utilization pattern and to analyze the cost recovery of mammography screening in fiscal year 1997, 1998, and 1999 at the National Cancer Institute, Ministry of Public Health. On mammography screening utilization, the sample covered 464 women who received mammogram and 432 women who received other services in this hospital. The utilization pattern was classified into the patient characteristics, the provider features and other factors related to national policy and diffusion of mammography. The cost was classified into labour, material, and capital cost from the provider point of view.

The utilization pattern of mammography screening is women aged over 40, with high educational level, high income group, and among civil servants and state enterprise employees. So, they are able to have higher chance to detect and prevent breast cancer in the earlier stage. The major factors influencing utilization of mammography screening are the awareness of people to take care of themselves, e.g. doing breast self-examination, routine checkup, recommendation of physician, and trust in quality and price of this hospital. However, the insufficient knowledge about breast cancer and mammography screening should be of concerned because it

is the strongest factor influencing the non-user group. The problems of provider at the National Cancer Institute are the limitation of radiologists, the capacity of machines, the limitation of the number of patient per day, the office time, and the payment mechanism of staff. These are very strongest factors for decreasing the utilization pattern of mammography screening. In Thailand, the national policy of mammography screening is not clearly introduced and there are 113 mammography machines installed, with about 54% (61 mammography machines) were in Bangkok and vicinity and 65% were private owned and operated.

The trends of total cost in fiscal years 1997 to 1999 of the Mamographic Unit are gradually increased from 3.22, 3.56, and 4.12 million Baht, respectively. The capital cost was determined as the biggest component of total cost, 3-fold when compare with labour and material cost. In term of the total revenue is increased every year because it depends on the number of patients in each fiscal year. The highest total revenue is 3.09 million Baht in fiscal year 1999, followed by 2.48 and 1.81 million Baht in fiscal year 1998 and 1997.

Calculation of the average cost of mammography screening is about 1,710 Baht/test and the marginal cost is about 467 Baht/test. The marginal cost is less than the average during the 3 fiscal years. Therefore, this hospital should try to increase the quantity of mammogram test at least until the marginal cost equals average cost or even higher. That will be the optimum solution for this hospital in long run to reach the objective of health service system in term of efficiency ground.

In term of cost recovery, it was indicate that the hospital loss profit all of 3 fiscal years, its cost recover ratio is only 0.68. But normally, in the public sector, the aim is not for maximize profit , but the coverage, equity of people should be concerned more. Therefore, the government or public sector should be invest especially the capital cost to provide welfare services for people. This study also is calculated the cost recovery ratio by comparing the total revenue to the operating cost, and it is found that the hospital can recover the cost 1.65-fold higher than its investment. This hospital can serve only 47% of the number of patient at break even point during the 3 fiscal years. Thus, the hospital should increase the number of mammography screening until it goes up to break-even point, which is about 23 cases/day.

5.2 Policy Implications

For providing policy implications of mammography screening from a macro-perspective, all information in this study will be proposed to the decision-makers at this hospital and at the national level as well. Based on this study, some policies need to be reconsidered:

5.2.1 To Increase the Quantity and the Coverage of Women for Mammography Screening

Concern with efficiency and equity of mammography screening, the policy of increase the quantity and coverage should be concern. The results of this study are very clearly shown that the marginal cost is less than the average cost and the utilization pattern is in high education and income group. Therefore, health education is very an important way to help raise the rate of mammography screening. Campaigns are a good, less costly way to increase quantity of women and raise public concern about this problem. Thus, this hospital still provide mammography screening under the demand of patients, this situation should shift demand curve to the right or increase the number of patients; and the hospital can reduce the charge for mammography test at the same time. This can be better off for both the hospital and patients in term of increased greater coverage, efficiency and equity of screening. It is necessary to regulate the pricing policy in long run and increase the coverage of people especially in the uninsured people. In this case, administrators and health planners can plan to work in this area, not only in a passive way, but in an active way with regard to preventive care as well.

5.2.2 To Decrease the Problems of Provider Side

As its incidence rate is increased, breast cancer has become the second most frequently found in women. If the providers have no concern and do not improve the quality of screening service immediately, the burden of breast cancer will be transferred not only to a patient herself, but also to all of her families and society. In the long-run, when the patient cannot get mammography in early stage, it would be too late to cure; so both the patient and provider should pay more and more

attention to this matter. On the provider side, this study has found several problems, e.g. insufficient number of staff, the capacity of machine, limitation of the patients per day, the office hours, and no incentive to the payment mechanism, etc. If such problems cannot be solved, this hospital will not be increased the quantity of patient or reduced charge and recover cost of this screening. The recovery cost of this hospital is a crucial point to be considered. To recover the cost, the price and the number of patients have to be increased in order to get more revenue and this service can be self-sustaining without any subsidy from the government. In addition, incentive of payment mechanism is another major barrier to getting more patients and gaining more revenue. So, policy-maker should set a policy regarding a new payment mechanism with the concept of "you work more, you gain more, and do everything in the right way."

5.2.3 To Control the Diffusion of Mammography, Based on the incidence Rate and Target Population

Diffusion of mammography or other high-technology machines, it should be in accordance with established criteria or regulations so as to monitor and control their appropriate use. As of 1999, there were a total of 113 mammography machines in Thailand; 54% were in Bangkok and 65% were privately owned and operated. Thus, in Bangkok the supply of mammography has for exceeded its demand, which will be lead to a number of problems, e.g., supplier induced demand and high cost of care; and some people need to access the service but cannot do so because of monetary barrier, insufficient knowledge, and limitation of radiologists. In analyzing cost components of mammography screening, the main cost is capital cost, which proportion is 3-fold higher than labour and material cost. If a hospital would like to recover the cost in a short period of time, it would try to convince all women in both high-risk and non-high risk age groups to have the mammography screening. The hospital will attempt to maximize its profits, which will result in a worse-off situation. Therefore, there should be regulations for controlling the diffusion of mammography, based on the incidence of breast cancer and the number of women in the high-risk group.

5.24 To Set a National Policy on Mammography Screening in Thailand

In Thailand, there has never been any national policy on mammography screening. Therefore, in this study I would like to set assumption an as follows:

- Mammography screening will be introduced as a National Policy in Thailand.
- The average cost and marginal cost of this hospital can be generalized.
- Women recommended to have mammography screening are in 4 age group (40-49, 50-59, 60-69 and 70-79).
- The women will be invited to take mammography screening at annual, biennial, and triennial.

Based on the conditions above, the government can set an amount of money to cover all or a certain percentage of women in different age groups. The amount of money can be calculated by multiplying the marginal cost by the number of women in each age group. Anyhow, when policy-makers use this information for making decisions, they should be aware of the limitation of this study because the marginal cost is derived from only one hospital. Moreover, they should pay attention to the objectives of their organizations, which are to maximize certain goals (utility or profits) with budget constraints. In addition, they should been in mind the welfare criteria, i.e. to increase efficiency and equity in this service.

The amount of money to be use for each age group can be easily calculated, based on the marginal cost per mammography test, which is shown in Table K.1; Appendix K. If the government set a policy to cover 100% of women aged over 40 annually, an investment on mammography screening will be about 4.17 million Baht. If the national policy is to cover all women aged over 40 at 2-year intervals, the investment should be about 2.08 million Baht. And for 3-year intervals, the investment would be about 1.39 million Baht. Anyway, in the first year of a pilot study before implementing the policy nationwide, the target population may be not be 100% of women aged over 40, but could be only older aged women. The decisions would be up to be policy-makers to make in the most appropriate way.

To set a national policy on mammography screening, there is clearly a need for closer collaborative planning. Government financial support is required to cover uninsured people, diffusion of mammography in the undeserved areas, training courses for the health personnel to provide screening and interpreting the result correctly, and promote collaboration between the public and private sectors in medium and long term. Thus, the national policy on this matter is very important to provide preventive care for people and minimize health expenditure in the long run by decreasing cost of breast cancer treatment. Finally, the people in society will be benefit more for their better health.

5.3 Limitation

This study was conducted under a time constraint, so samples were collected, during a 2-months period by using a questionnaire, from the patients who utilize at the National Cancer Institute during that time. Non-users are not the general people, they are the patients who received other services in this hospital. Therefore, they are not population-based data and policy-maker should remind when generalize this part of result. The provider features were derived from interviewing and had the limited of time to study more detail, so, in this part need to explore further later.

For utilization pattern, cost, revenue, and cost recovery; the data were collected as hospital-based information and only one specialized hospital for cancer care in Thailand. Thus, the results of utilization pattern might be different if the study was conducted in a larger number of hospitals and other kinds of hospitals, such as university hospitals, private hospitals, Bangkok Metropolitan Administration (BMA) hospitals and other public hospitals. So, if policy makers would like to use the results of this study, they should bare in mind that the results were derived from only one hospital.

5.4 Further Studies

This study was carried out in one hospital; that means only hospital-based information was obtained and analyzed. Then, for more information on population-based, further studies should be conducted:

- Utilization pattern of mammography screening by population-based setting with an information system set up to collect sociodemographic characteristics and people's health history. It will be very useful for health policy and decision-makers to develop an appropriate national policy on mammography screening in the future.
- Utilization pattern of mammography screening in private , university, BMA or other public hospitals. Then, comparing the results from each setting to find a better way to access all groups of high-risk women. For every screening percentage of coverage for each target group should be set first, then expand it to all in a later stage.
- Conduct a cost-effective analysis of mammography screening for each aged group.
- Conduct a benefit-cost analysis of mammography screening in various perspectives or viewpoints, e.g. of providers, consumers and society.

5.5 Recommendations

- Increase public awareness about mammography screening among women and develop a health service including referral system to support the screening, in order to increase the quantity and coverage of women in the target group.
- Expand the insurance coverage of mammography screening, especially among the poor, to increase equity in society and let them have a chance to utilize this screening at the early stage.
- Train health personnel, particularly radiologists to provide mammography screening. They should be have an experience in interpreting the results because a mammography cannot show every abnormal area in the breast as its specificity is only about 94-99%. However, the increasing use of

mammography screening should be concerned about false positive, which can occur in people with a low prevalence of breast cancer.

- Extend the office-hours of providers and reduce the cost of unit charge for mammography screening.
- Increase the productivity of radiologists and mammography staff by setting up a new payment mechanism.
- Set some regulations on diffusion of mammography in the country in order to increase efficiency and make in mammography screening more cost-effective.
- Set a national policy on mammography screening for increasing the coverage of women to reduce the risk of breast cancer.