CHAPTER 2

LITERATURE REVIEW

Maternal Mortality Rate (MMR) of a country is globally now considered an indicator of the overall status of women. In Bangladesh MMR represents the gender discrimination, neglect and deprivation on one hand and on the other hand it represents failure of the health system to effectively provide MCH services. This situation not only affecting the health of the mother and children, but also affecting the health of the general population. A considerable amount of the resources are also being spent every year to reach the desired target, but the result is not satisfactory. In view of the fact, it has become urgent to analyze the cost-effectiveness of MCH services. As MCH is broad umbrella of services, only ANC services at THC and H&FWC are the scope of the present study. To discuss cost-effectiveness of ANC services, following are of ulmost importance.

- ANC Services
- Utilization of the Services
- Cost Identification
- Cost-effectiveness analysis

2.1 ANC Services

Antenatal care is the term used to described the medical procedures and care that are caried out to during pregnancy to produce a healthy mother and baby at the end of the pregnancy. Accorcing to Park (1994), the objectives of antenatal care are:

- To promote, protect and maintain the health of the mother during pregnancy.
- To dectect 'high risk' cases and given them special attention
- To foresee completion and prevent them.

- To remove anxiety and dread associared with delivery
- To reduce maternal and infant mortality and morbidity
- To teach the mothers elements of child care, nutrition, personal hygiene, and environmental sanitation
- To sensitise the mother to the need for family planning including advice to cases seeking medical termunation of pregnancy and
- To attend to under-five accompaning the mother

Several studies e.g Lindmark & Cnattingius (1991), Abou Zahr and Royston (1991), Rasid, Khabir and Hayder (1992), Feuerstein (1993) and WHO (1994) try to emphasis how antenatal care is important. They believe that one of the four pillars of the safe motherhood is ANC care. The overall aim of antenatal care is to produce a healthy mother and baby at the end of pregnancy. But the challenge lies in reducing the death and injuries where pregnancy is wanted. Antenatal care in addition to promote of general health during pregnancy, can prevent complications where possible and can ensure the complications of pregnancy are detected early and treated properly Clean and safe delivery can reduce the risk of trauma. But antenatal care and clean and safe delivery will have very little impact on maternal deaths and injuries if modern obstetric care is not avail able for those who need it. An important element in reducing health risks for mother and children is to increase the proportion of babies that are delivered in health facilities under medical supervision. Proper medical attention and hygienic condition during delivery can reduce the risk of infections and facilitate management of complications that can cause death or serious illness for the mother or the newborn. Bangladesh Demographic Health Survey 1996-97 showed that those births occurred before five years, all most all births by place of delivery (95 %) was at home. They stated that the use of health facilities for delivery is much more common in urban areas (23 %), among mothers with some secondary education (17 %), and among mothers who received at least four antenatal care visits (34 %). Differentials by age of the mother, birth order, and division are small.

So in primary health care approach to reach the goals " health for all" by the year 21st century ,must be implemented cost-effectively, because of the severe constraints of financial resources are facing in the health sector in many developing countries. A key requirement is for knowledge about the costs used for Maternal and Child Health Program especially for ANC services and on the results that are yielded. Creese and Parker (1994) citied that the outcomes linked to the cost analysis are intended for direct use to improve quality of service and are also useful to make appropriate decision about allocation of resources as per need for target population to the community.

In Bangladesh Thana Health Complex and Health and Family Welfare Center have been constructed at the thana and union level with the prime objective of providing smooth delivery of health and family welfare services to the rural people satisfactory, their efficiency and or effectiveness have, to a large extent, been limited by a number of impediments. The population of the thana and union and their health and family welfare needs are increasing rapidly. To meet the increased demand, urgent need has now arisen to improve the efficiency in terms of cost-effectiveness.

2.2 Utilization of the Services

Say et al (1996) studied about ANC services to determine the non-utilization rate and to identify the main factors associated with non-utilization of ANC services by pregnant women in Bati District, Takeo province. In this study 396 mothers were interviewed and found that 35.9 % used ANC services while of the remaining 64.1 % did not, 5.1 % used Traditional Birth Attendants (TBA) and 59 % did not consult. The study made conclusions and recommendations that there was dissatisfaction with services as 45 % only made one visit or it may indicate that there was not a felt need to continue visits.

Deborach and others (1997) in their study on according to the design and evaluation of maternal mortality program explained that the distance to the health facility, availability and efficiency of transportation and cost of health care all influence

people's readiness to seek care. The reputation of the facility can play key role. People may not seek medical help promptly or at all if they believe the services to be of poor quality. Accessibility is a function of distance from the health facility, availability and efficiency, and cost. Accessibility is also a function of the services offered at varies level of the health system. They also included that a facility can have all the staff and supplies required and yet provide very poor care. So it is important to remember in evaluating performance. Thaddeus S and Maine (1994) found smilar result that the cost, distance and quality of services are the obstacles in using essential obsterict care service. Patients who make a timely decision to seek care may still experience delay due to their inaccessibility to health services.

In Bangladesh a base line survey conducted by NIPORT (1997) found that only 2.2 % expected annual births were taking place in facilities. Barriers to the provision of the expected level of services included inadequacies in availability of trained personal, necessary drugs and equipment. Good leadership and management were identified as a factor which strongly influenced the utilization of services, as did the good reputation of the service provider/ center. Less quality of care increases the cost of both for provider and patients.

Mitra et al (1994) found that the proportion of pregnant women receiving tetanus toxoid injections has risen recently in Bangladesh. For births occurring in roughly 1991-93, 66 % of mothers received at least one tetanus toxoid injection during pregnancy, while by 1992-96, the proportion has increased to 75 %. A study in the rural areas of Bangladesh was done by Bangladesh Rural Advancement Committee (BRAC) and London School of Hygiene and Tropical Medicine cited by Goodburn et al (1994) reported that among 989 pregnant women, 55.1 % of the women interviewed had tetanus toxoid during their pregnancy.

Ahmad (1995), did a study about the impacts of underutilization and overutilization of health services between Thana Health Complex and District hospital in Bangladesh to develop a methodology for assesment of the impacts of underutilization of Thana Health Complexes and overutilization of District Hospital in Bangladesh. He

discribed that impact can be measured in terms of a) quality of care b) allocation of resources and c) satisfaction level of the patients and the quality of care also can be measured by i) average waiting time for admission in hospital ii) the average length of stay in the hospital iii) doctors spending time per patient iv) nurses spending time per patient v) discharge rate of the patient vi) cost of treatment per bed. In this study it was discussed that the Thana Health Complex having 31 beds each are situated at the rural areas, but the rural people do not prefer to utilize the services at Thana Health Complex, rather they prefer to go to the District hospital. He cited that due to the underutilization of hospital services, the drugs allocated for 31 beds are consumed by the lower number of patients than the bed capacity, which is also a wastage in comparison to average allocation. He thought that at District hospital most of the time the number of patients occupy the beds more than the bed capacity and thus overutilized. But the difference is that study explained the impact of underutilization and overutilization in terms of occupy of hospital beds i.e in patient services and in this study costs were estimated only for outpatient services for the Thana Health Complex and below thana level i.e Health & Family Welfare Center under maternal and child health program.

2.3 Cost Identification

The resources are limited in the health sector to manage the health problem to the community as their needs. So the cost of the scarce resources in health care service is a very important factor that must be proper utilized and efficient used to achieve the goal. Each managerial level requires information about the cost for various activities for health care service planning and budgeting in the future for effective and efficient management of health care service.

Matz and Usry (1976) in Cost Accounting, Planning and Control defined about cost as "Cost is a forgoing, measured in monetary terms, incurred or potentially to be incurred to achieve a specific objective". While Horngren and Foster (1987), on the

other hand, explained accountants usually define costs as resources sacrificed or foregone to achieve a specific objective.

Creese and Parker (1994) cited about cost classification that to estimate a health programe's costs classification of their component is necessary. Cost can be classified by inputs as capital cost and recurrent cost. It is also cited – those that are used up in the course of a year and are usually purchased regularly (i.e. recurrent costs) and those that last longer than one year, such as building, vehicles and equipment (i.e., capital costs).

The authors also described that a good classification scheme depends on the needs of particular situation or problem and based on three conditions that are: it must be relevent to the particular situation, the classes or categories must not overlap and the classes chosen must cover all the possibilities.

Moriarity and.Allen (1987) classified of costs in the way that costs may be traced to a cost objective – a direct cost and indirect cost. It also defined that a direct cost is a cost that is easily traced to a cost objective, whereas an indirect cost is one that is not easily traceable to a cost objective. In this study cost is classified by input and the activities. The indirect cost i.e, administrative costs allocated to the patient service department following appropriate porportion i.e, percentage shared with the activities. This cost only incurred for outpatients of antenatal services under MCH-FP program and this costs were related to outcome for providing antenatal care. There is no generation of revenues, because the service is full free.

Ali conducted a study in 1998 to analyze the provider costs for management of diarrhea at District Hospital and Thana Health Complex at Manikganj District in Bangladesh. He estimated provider cost per patient per day for the management diarrhea patients at IPD of Manikganj District was Tk 317.87 and at Thana Health Complex was Tk 406.90. Cost per OPD visit at District Hospital was Tk. 53.74 and at Thana Health Complex was Tk 63.32. The study revealed that the highest cost components of providers at District hospital and Thana Health Complex were the

capital cost followed in order by the labor and material costs. In District hospital percentage of costs shared by capital, labor and material cost components were 41.4 %, 25.7 % and 23.3 %, whereas in Thana Health Complex were 44.1%, 29.8 % and 19 % respectively of the total unit cost. Average provider cost at IPD and OPD of district hospital was much less than those of Thana Health Complex. This is because of almost full utilization of district hospital and under utilization of Thana Health Complex and also might be due to more efficient services provided by the District Hospital. To reduce the excessive load at disitrict hospital and to ensure optimum utilization of rural health facilities, the study recommended improvement of servises at THC. Finally study put much emphasis to strengthen out patient service (OPD) at lower level (THC) and in-patient service (IPD) at higher level (District Hospital). Only the complicated cases should be encoureged to utilize the higher level facility.

2.4 Cost- Effectiveness Analysis

Drummond et al (1997) defined cost-effectiveness analysis (CEA) is one form of economic evaluation where both the costs and consequences of health programes of treatments are examined. In order to carry out a CEA an organization will have a set of objectives. Moriarity and Allen (1987) also stated that in cost accounting that management of the entity will require information for planning how to achieve these objectives and also information on whether objective are actually being achieved.This latter aspect focused on two factors: 1). Whether the goals were met – that is, effectiveness and 2). whether it was able to provide the service with a minimal expenditure of resources – that is efficiency. In general, by measuring effectiveness and efficiency is to help management control the activities of the organization.

Carrin and Evlo (1995) described that cost effectiveness analysis is able to show the extent to which a given system of enhancing is economically efficient and one way of applying this method of analysis to the study of a health project or intervention is to try to minimize cost once the objective has been determind.

A cost-effectiveness analysis study was done in rural Georgia, USA, in 1979 illustraing the estimates of infant health status and prenatal care expenditure before and after the implementation of a nurse-midwife program. The comparision examines neonatal mortality, birth weight, gestational age and the presence of symptoms of disease as measures of birth outcome. Three type of expenditure were estimated including hospital care, physician care and care delivered by nurse-midwife.

It can be seen from the above review that although cost-effectiveness analysis is common used in a cost and it's related outcome, it also provides a system of enhancing the efficiency as needed to a health project or intervention to minimize cost to achieve the expected goal.