CHAPTER II

ESSAY

Quality Antenatal Care:

A Reason to Ensure Skilled Attendance at Births

2.1 Introduction

Pregnancy and childbirth services are often the first entry point or contact with the health services that a woman makes, therefore provides a valuable opportunity to identify and treat illnesses such as anemia, tuberculosis, malaria etc for which early treatment is critical. Antenatal care is one of the services women are most likely to use, and it offers chance to counsel for family planning, sexually transmitted diseases, including HIV/AIDS and about safe pregnancy.

To manage obstetric complications – the key life saving component of maternity care – a facility must have trained staff and functioning operation theater, and must be able to administer blood transfusions and anesthesia. All these resources and the capacities can be applied to the management of accidents, trauma, and other medical emergencies. Indeed, one way to evaluate the performance of a country's health system is to examine the functioning of its prenatal and delivery care system.

The success of a country's maternal health program also reflect its performance in meeting other development objectives, such as infant and child mortality reduction, gender equity, and reduced fertility (The World Bank: 1999, p.2).

Rendering antenatal care service to the most needy and vulnerable group is a challenge in which many factors hinder utilization. Mostly depends on the behavioral pattern of clients like education level, culture etc., the health care environment, and appropriateness of technology. And the availability of other supports like obstetric care and adequate referral system.

During the prenatal period a woman is in contact with the health services for quite sometime. This is an opportunity which health system can avail to disseminate health promotion messages and to detect otherwise undetectable diseases. So every effort is worth it, to encourage the women to use the health services optimally for the benefit of both mother and child. For Bhutan where the information resources are at very early stages the only chance will be lost, if opportunity is not availed, as other forms of media may not reach them at all, except by radio.

So this study looks at the relationship between the antenatal care received and the failure to use the other components of safe motherhood package, specially failure to use the assistance of the trained personal for delivery. This is also an opportunity to find out some of the broader and rectifiable causes of problem in the health system in Bhutan with particular reference to the National Referral hospital, in Thimphu.

Antenatal care in particular is one service in hospitals where people who are not sick come but may end up with serious complications even those who are known to be "low risk". Seventy percent of the obstructed labor cases occur amongst women who are the low risk and 90% of the women who women were thought of as high risk delivered normally (Nadia Hijab, UNFPA. 2002). The sheer unpredictability of pregnancy demands high level of preparedness and integrity of the referral system. This is also an opportunity to address issues related to hospital administration or organizational resources. Prenatal care addresses two subjects at one point of time – the mother and child. So this acts as a trigger point for quality improvement of both newborn and the obstetric care.

Since it is all about how to improve the maternal heath status by various interventions it is important to consider some of the factors responsible for maternal morbidity and mortality. And also to examine whether anything can be done given our situation.

Maternal mortality is affected by standards of the obstetric care, unlike the infant mortality, which is more sensitive to changes in the social, economic and environments (*Irvine Loudon. 1991, as quoted in UNFPA 2002 module 1, Understanding the causes of maternal death.)*. So it is prudent enough to identify the causes of gaps in the services and the consequences and find out some of the remedies that will help health services adopt some strategies to reorient the Antenatal care delivery with added quality. Then to draw up some appropriate strategies to increase

utilization of the ANC and demand for services of trained personal for skill attendance at birth at the community and institutional level.

2.2 Pregnancy and Well Being:

Pregnancy is physiological phenomenon in which a female attaining reproductive maturity bears child after an appropriate contact with a male. Though it is a state when people consider this as a happy moment, women without exception will require very special individualized care and psychosocial support (Mary, Gabay. 1997).

It is important to bear in mind pregnancy as a special event. The total risk of death or developing complication due to pregnancy is raised given the vulnerability due to poor nutritional status, very young and short interval between pregnancies. Compounded by hazards of the poverty, illiteracy and harshness of the living conditions. This is very relevant in our part of the world. Most often there are apathy among many of us as stated here, " In most developing country setting, pregnancy and childbirth are accepted as normal events of life and it is not surprising that problem associated with pregnancy are also accepted without much ado." (Supriya. et. al. 2001).

In the industrialized countries the conditions are different but employment, other professional activities as well as daily commuting times and sometimes lack of social support can aggravate the negative effect of pregnancy (Rumeau-Rouquette.et.al.1997).

The most commonly associated conditions during pregnancy are malaise, excessive fatigue, and at times depression. During the first trimester, nausea and vomiting affect more than two third of the women and in the industrialized countries physical manifestation and anxiety induce heavy consumption of medication particularly tranquilizers and even neuroleptics which have been known to be teratogenic in the past.

In the second trimester some of the indicators of the major disorders appear pregnancy- induced hypertension, edema, and threatened pre-term delivery. And in the third trimester the system associated with transformation appear, weight gain, edema, and constipation. The signs of toxemia and preexisting disorders such as tuberculosis and heart diseases become aggravated. It is also during this period the threatened pre-term labor, intrauterine growth retardation may require women to rest or even to be hospitalized with disruption in the household chores and detachment from home.

After the delivery the immediate after effect of the childbirth appear, scaring from tears and or due to episiotomy, back, muscle and joint pains, after effects of caesarian, uterine contractions and so on. And there are problems associated with breast-feeding, like pain caused by chapping and often due to infection.

Survey conducted in Birmingham, United Kingdom, (Mac.Arthur.et.al.1991). Among those women who delivered 3 to 4 months before, 70% of them experienced the symptoms of backache, urinary and bladder pain, particularly incontinence. It is known fact that maternal morbidity is extensive and under recognized after delivery in Bhutan,

as it is not reported separately as due to childbirth after the delivery. There are opportunities to improve whole of health information system in the country.

2.3 Burden of the Maternal Illness.

In order to understand the maternal illness burden we have to look at it from a broader perspective of women's health. Within which is set of issues related to the women's reproductive health which is important considering the women during their reproductive years (15 to 49 years) whether they have children or not. When they decide to become pregnant and have children is the time we refer as the maternal health. Most often women have healthy and safe pregnancies and deliveries. But smaller numbers of women face serious illness or maternal morbidity as result of pregnancy. Most of the cases are due to the direct obstetric complication and in the minority of the case it is as result of preexisting conditions. In the developing countries women who suffer from maternal morbidity is estimated to be between 18 and 60 million (UNICEF.1999). Then within the group who face illness due to pregnancy related factors there is a group of women who die, 75% die due to direct obstetric cause and 25% due to preexisting conditions like anemia, malaria, HIV/AIDS etc. which are made worse by pregnancy. This is estimated at 515,000 a year (WHO/UNICEF/UNFPA, 2001.)

Of this 99% occurs in the developing world and 99.4% of all deaths are of public health importance. (Rodolfo,A.et.al.2001). The South East Asia accounts for

40% of the global maternal death.(WHO/SEARO 1999). Bhutan's maternal mortality rate is 255/100,000 (National Health Survey.2000). This is by and large is far above among many of the countries in the region. So there is need for us to stride extra miles in maternal care.

The World Bank in its commemorative issue on the tenth Anniversary of Safe Motherhood 1998 gave thought provoking figures like;

- Complications of pregnancy and childbirth are the leading cause of death and disability among women of reproductive age.
- One in four adult women in the developing world suffers from acute or chronic conditions related to pregnancy.
- Twenty percent of the burden of disease among children under five is attributable to perinatal conditions – low birth weight, birth asphyxia, and birth related trauma- directly associated with poor maternal and poor quality of obstetrics and newborn care. These same conditions are responsible for more than 3 million deaths of newborn each year.
- Research from Bangladesh shows that children up to the age of 10 whose mothers die have three to five times the mortality rate of children whose mothers are alive or whose fathers die. A recent study from Tanzania also found that a detrimental effect on children's education, especially at the secondary level. Most of loss and the suffering are preventable.

2.4 Life Time Risk

This is the average risk associated together with average number of times a women becomes pregnant at the given current level of fertility, which is quite high in the developing countries. Estimates of lifetime risk have been calculated for the different geographic regions: 1 in 16 for Africa, in 65 for Asia, in130 for Latin America and Caribbean and in 3200 in the west. This shows how different the scenario is in the developed world and in the developing world. Does the economic development, changes in demography and biological factors affect this or are there other factors, which determine the differences?

Disparities exist even within regions and within the regions of the countries and even between the races (Koonin.et.al.1997). The most important factor being poor or substandard care in handling the direct causes of the maternal death (al-Meshari,et.al. 1996). It is also known that more than half of women in the third world deliver without an attendant trained in midwifery skills, and about one third of pregnant women have no prenatal contact with appropriately trained health worker or provider. Conditions vary widely by region, country and even locality. Sub-Saharan Africa, South Asia and Middle East and North Africa account for 90 percent of maternal deaths. In these regions, women have limited access to prenatal, delivery and postpartum care and treatment for obstetric complications and the quality of care are generally poor. In Bhutan equity in the services specially the maternal and childhood care is accorded very high priority by the government. This picked up rapidly after the introduction of the primary health care approach from early seventies. Despite the most difficult terrain

and sparse settlements the population is reached through the basic health units, out reach clinics, regular mobile services and the village health worker programs backed up by the district hospitals. This has brought down maternal mortality from 380 in 1994 to 255/100,000 live birth (National Health survey 2000). Childhood immunization is above 85% coverage whereas the ANC coverage is just at 51% with 24% skilled attendance during delivery. So in the area of maternal care there is need to make much more effort. The maternal illness burden is still high in the country compared with many countries in South East Asia.

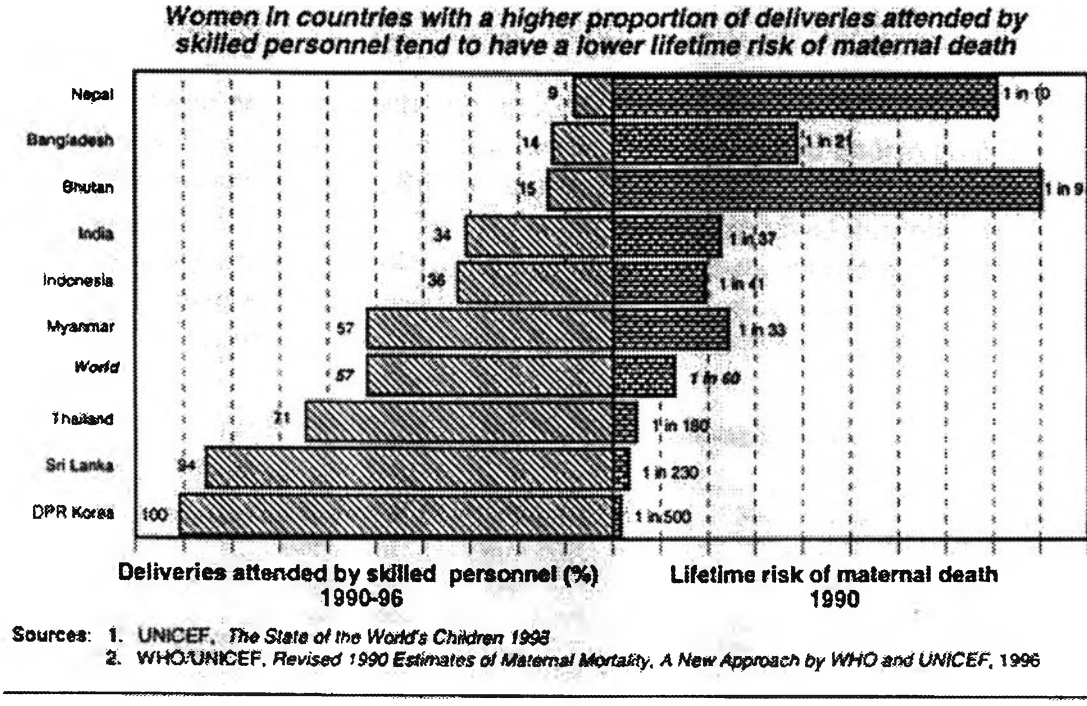
Table 2.1: Shows the lifetime risk of maternal death.

	Maternal Mortality ratio	Lifetime risk 1 in..
World total	**430**	**60**
Africa	**780**	**16**
Asia	**390**	**65**
Europe	**36**	**1400**
W.Europe	**17**	**3200**
LAC*	**190**	**130**
N.America	**11**	**3700**
Australia & N.Zealand	**10**	**3600**

Source: UNFPA 2002. Module I, Reducing Maternal death.

* LAC = Latin American and Caribbeans.

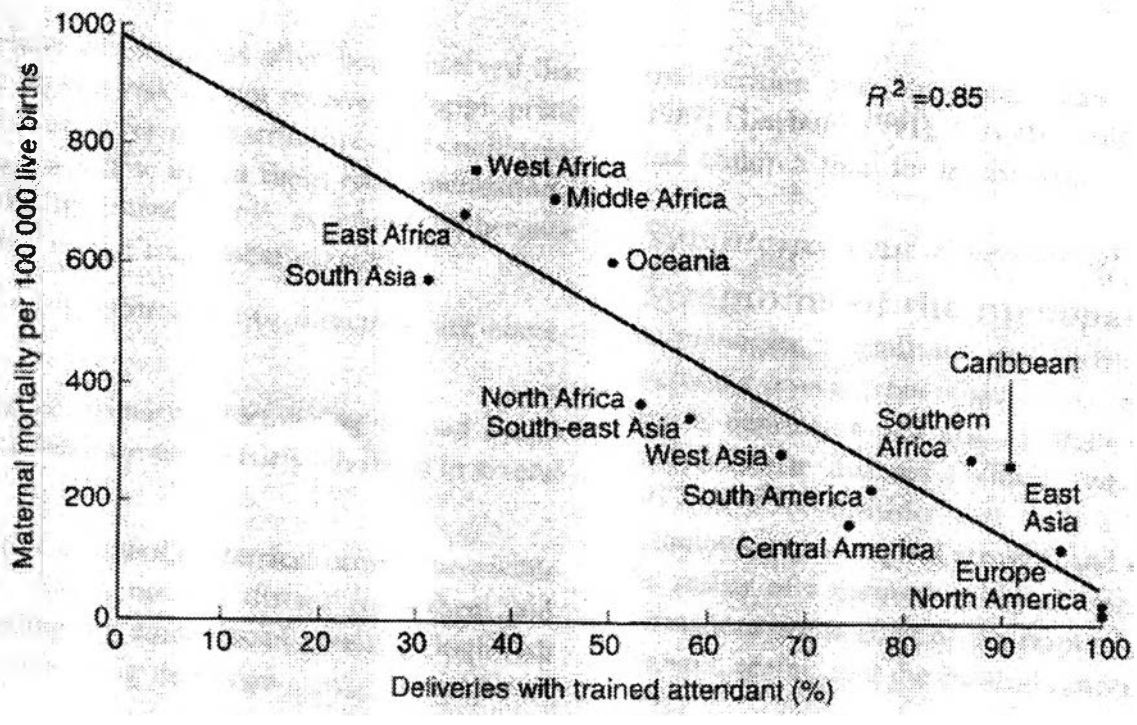
Figure 2.1: Proportion of trained deliveries and lifetime risk.



Source: WHO/SEARO 1999 pp. 53.

From this figure it is clear that in Bhutan the lifetime risk is very high one out of nine women has chance of dying due to pregnancy related complication. The recent survey conducted in the year 2000 shows that 78.3% of all deliveries take place at home not assisted by midwifery trained persons. This is despite the fact that 51% of the mothers had made at least one Antenatal visit. This indicates that antenatal coverage does not really increase the deliveries assisted by trained personals.

Figure 2.2: Shows inverse relationship between trained deliveries and maternal mortality.



Source: Oxford Text Book Of Public Health 3rd.Edition Vol.3.1997.

In industrialized countries there are at times overmedicalization of pregnancy and child birth, in Europe people are paid incentives in the form of money and other social benefits to utilize antenatal care and maternity services (Beatrice Blondel.1991 & Pamela.et al.1998). Where else in the developing world only 55% of women receive care from qualified persons in contrast to 95-97% in developed world. The term 'midwifery trained personals' means that have received training in the midwifery and include doctors midwives assistant nurses, health assistants, basic health workers and matrons. Hence taking the most proximate services which is directly associated to death or normal outcome, strengthening of the obstetric care in general and emergency

obstetric care in particular is essential. Alongside Antenatal care must be made more proactive and action oriented. Hence the screening of the risk indicators should be made systematic and devise certain standard protocols to pick up every possible woman who are pregnant.(WHO/SEARO.1999). It is also very pertinent that not only risks identification but decision for the timely referral is important. A functioning referral unit not too far from the population needs to be in place that can respond to all emergencies, and conduct safe deliveries.

2.5 What are the Causes of the Maternal Death?

Maternal death is defined as ' the death of a woman while pregnant or within 42 days of termination of pregnancy irrespective of duration or the site of the pregnancy, from any cause related to or aggravated by pregnancy or its management but not from accidental causes' (WHO)

The causes of maternal death is categorized into direct and the indirect causes. Direct causes of the maternal death constitute 75% of all deaths. The five major causes of maternal mortality are, bleeding, unsafe abortion, eclampsia, obstructed labor and infection which contribute about 86% of all direct causes. 99.4 % is public health problem and is preventable. No mother should die needlessly. There are technologies, which are cheap and effective. Commitment from the leaders and dedication of people who have the know-how will be required to make difference. Additionally an

environment of concern for others and people getting what is essentially due to them will help reduce the burden.

Indirect causes constitute 25% it stems from preexisting medical condition and is made worse by pregnancy e.g. anemia, hepatitis, rheumatic hearts disease, HIV/AIDS - about 2 million HIV positive women worldwide give birth (UNFPA 2002). In our part of world where incidence of the infectious hepatitis is so rampant every year many women die during pregnancy. It is also is case where the malaria is a problem, and the malaria control program is not in full gear and women will die of malaria and chronic anemia. So are with many control programs, which have direct bearing on women's health. Thus care during pregnancy requires inputs from all sectors and optimally functioning health system.

Assessing maternal and perinatal prevalence in Bhutan is very difficult as there are under reporting of the vital events, as we have to depend on 'lay reporting'. The system of vital registration is still quite weak and we have to validate only by national surveys, which are expensive and have high recall bias due to high adult illiteracy rate prevailing at present.

Table 2.2: Causes of the maternal death in order of occurrence.

Causes	All maternal Death percent	Direct obstetric death of 75 percent.
Indirect causes	25	
Hemorrhage	21	28
Unsafe abortion	14	19
Eclampsia	13	17
Obstructed labor	8	11
Infection	8	11
others	11	14

Source: UNFPA 2002 pp.12.

2.6 The Urgency for Action

It is stated that the avoidability of deaths needs to be evaluated by the standards realistic under the circumstances prevailing in that country at that time. (Sundari, S.K.1992). We may be asking too much to emphasize on the maternal health when there are other urgent needs in the health sector like control of communicable diseases such as tuberculosis, malaria etc. With limited resources and needs so immense there are risk of doing everything at once and fail. So it is always better to examine the problem from country's development context and prioritize the interventions based on

the needs. But the essential fact is the maternal issue must feature on the road map of the plan and the policy of the country with proper framework, which lay out the sequencing of intervention to achieve long term goals (The World Bank.1999). It is also important that the planners and the decision-makers realize the gravity of the problems poised and far-reaching socioeconomic impact on the human development. This requires commitment and sustained approach from everyone –from individual to world community.

2.6.1 International commitment

The World Health Organization (WHO), the United Nations International Children's Emergency Fund (UNICEF), United Nations Fund for Population Activities (UNFPA), The World Bank and many other organizations came together to address the severest concern over poor maternal conditions in the developing world. And to develop most cost effective interventions with appropriate technology. So the Safe Motherhood Initiative crystallized in the Capital City of Uganda- Nairobi in the year 1987. This was the first of its kind to bring forth the maternal issues in the forefront of the international public health agenda. This initiative was launched looking at the alarming burden of unnecessary deaths and suffering, unnecessary because seeing at the figures 99% of the deaths are from the developing world and only 1% occur in the developed world (UNFPA 2002). This is preventable with minimum cost.

Subsequently many targets were set to eliminate or to alleviate the agony women under the auspices of international and national agencies.

- The most important landmark among them were International Conference on Population 1994 (ICPD-1994) where besides the global targets for population development maternal health was brought to forefront by setting important goals such as :

    1. Reduction of maternal mortality ratio by 50% between 1990 and 2000 and further 50% reduction by 2015.i.e an overall reduction of 75% between 1990 and 2015.
    2. Where the maternal mortality rate is high, at least 40% of all births should be assisted by skilled attendants by the year 2005, by 2010 this figure be at least 50% and by 2015 at least 60 %. Globally, 2005, 80 % of all births should be assisted by skilled attendants, by 2010, 85% and by 2015, 90%.

- WHO's Making Pregnancy safer initiative reinforces and rejuvenates the internationally agreed targets for the reduction of maternal and infant mortality through intensification of activities with its partners within the WHO's mandate. Governments receive guidance, advocacy and technical support to ensure that safe motherhood is prioritized within their policies, budgets and evidence based norms and standards of the care are appropriately applied.

2.6.2 Country health sector.

Depending upon the development context the safe motherhood is prioritized, in most cases maternal health is on the top of the agenda, but depends upon the donors for support. The targets are set but usually there are displacements of foci to address strengthening of health system. This compromises quality of the service. And at times failure to sustain care as it becomes donor driven. But the tendency is reversing and there are overall reductions in the maternal mortality and infant mortality seen and felt in our part of the world. This must be addressed through health system reforms in which the maternal health must be key issues.

- It is the responsibility of the countries to make the package of the safe motherhood available at the community level. This will have to take place through the expansion of the services but it does not mean building more infrastructures like buildings, sheds and all but rather by consolidation and upgradation of the existing ones. This is very true in Bhutan as putting more infrastructures will need more manpower and becomes expensive to maintain. The core aim should be to improve the quality of services and to tailor them to meet the needs of the women and the community by:
- Ensuring that health facilities have adequate number of trained staffs, continuous supply of drugs and equipment and are linked to hospital by emergency transport and referral system.
- Enforcing standards and protocols for the service delivery, management and supervision and using them to monitor and evaluate

the quality of services, along with feedback from clients and the health provider.

- Medical services are free of charge in Bhutan so ways to encourage women to utilize this opportunity effectively is what is important and large part of the responsibility lie in the hands of the providers. So quality of system will be very crucial in this context.

2.6.3 Community

More than half of the women in our part of world deliver without any attendance by midwifery trained personals. And most of the complications and maternal deaths are due to home deliveries conducted without assistance from the trained personals or failure to go to the nearest health facilities. It is important that families and communities are educated about good maternal care for which antenatal clinic sessions are excellent opportunity. But general awareness campaign must be ongoing. The information, education and communication in health (IECH) unit in Bhutan will have to play very vital role in reaching the messages to the remotest corners through general advocacy and targeted information to those who are decision makers during pregnancy and childbirth.

It is reason enough to examine the demand side of the services such as the family income, social support, demographic characteristics, etc as shown in the figure 3, and 4. Some of factors are discussed below though they are not the most important ones but just to show they are the common factors.

Distance, to health center in most of the cases of the maternal tragedy is physical which limit the access. In Bhutan's context this is true, as a mountainous country with very thinly spread out population reaching to the needy mother is the most difficult. Distance when compounded by lack of transport is doubly frustrating. People may want to deliver in the health facilities but the distance from the home dampens the enthusiasm. (Ooterbaan,MM.,WHO. Stat Q. report. 1995).

- *Poor information to* women and the members of the families often delay the prevention of complication of pregnancy or they are unaware of dangers and to seek timely medical help. Many women suffering from anemia usually lack health education (Thassi,J.et.al.2000) during pregnancy. So communities can be given messages about good nutritional habit so that anemia and other nutrition related ill effects are prevented before it is too late.
- *Cultural preferences*, people's perception regarding the formal health services pertaining to pregnancy and childbirth may conflict with the culture including preferences for privacy, immodesty and female attendants
- *Lack of decision power*, in most part of the world women's power to make decision is limited even over the matters directly related to their own health.

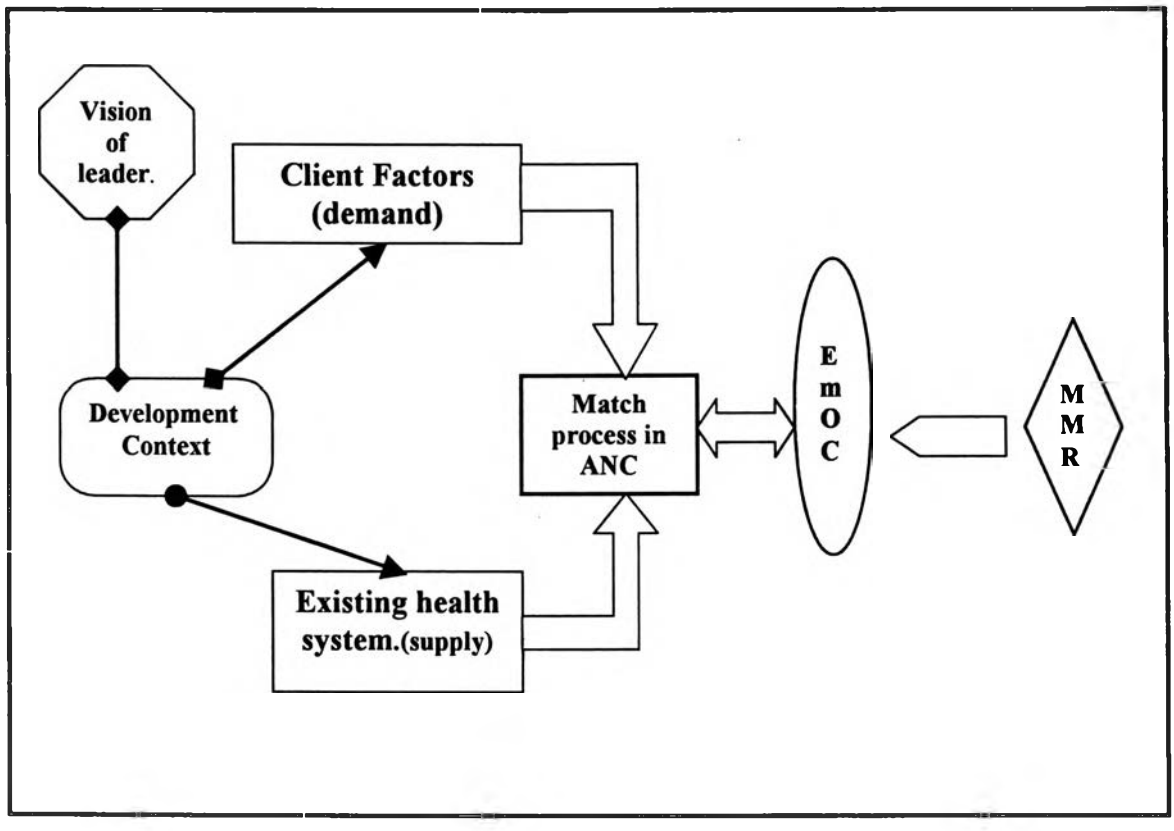
Hence community involvement through awareness campaign in matters related to the pregnancy and childbirth would boost up the commitment to prevent a mother from dying.

In Bhutan community participation, like training the village health workers (VHW) for safe deliveries and actively involving them with the health centers in identification of the pregnant women in the communities who fails to attain the ANC clinics can be of immense help. During difficult labor people in the community come forward to render help to carry the women to the health center or go to call the health workers. Community can form teams to accompany the women while she is being taken to health center to donate blood. Families and friends play very significant role in encouraging women to begin care (Winstoms..2000). They can discuss and draw contingency plans for any eventualities related to health and wellbeing, of the mother and child.

2.6.4 Motivation for Self-care

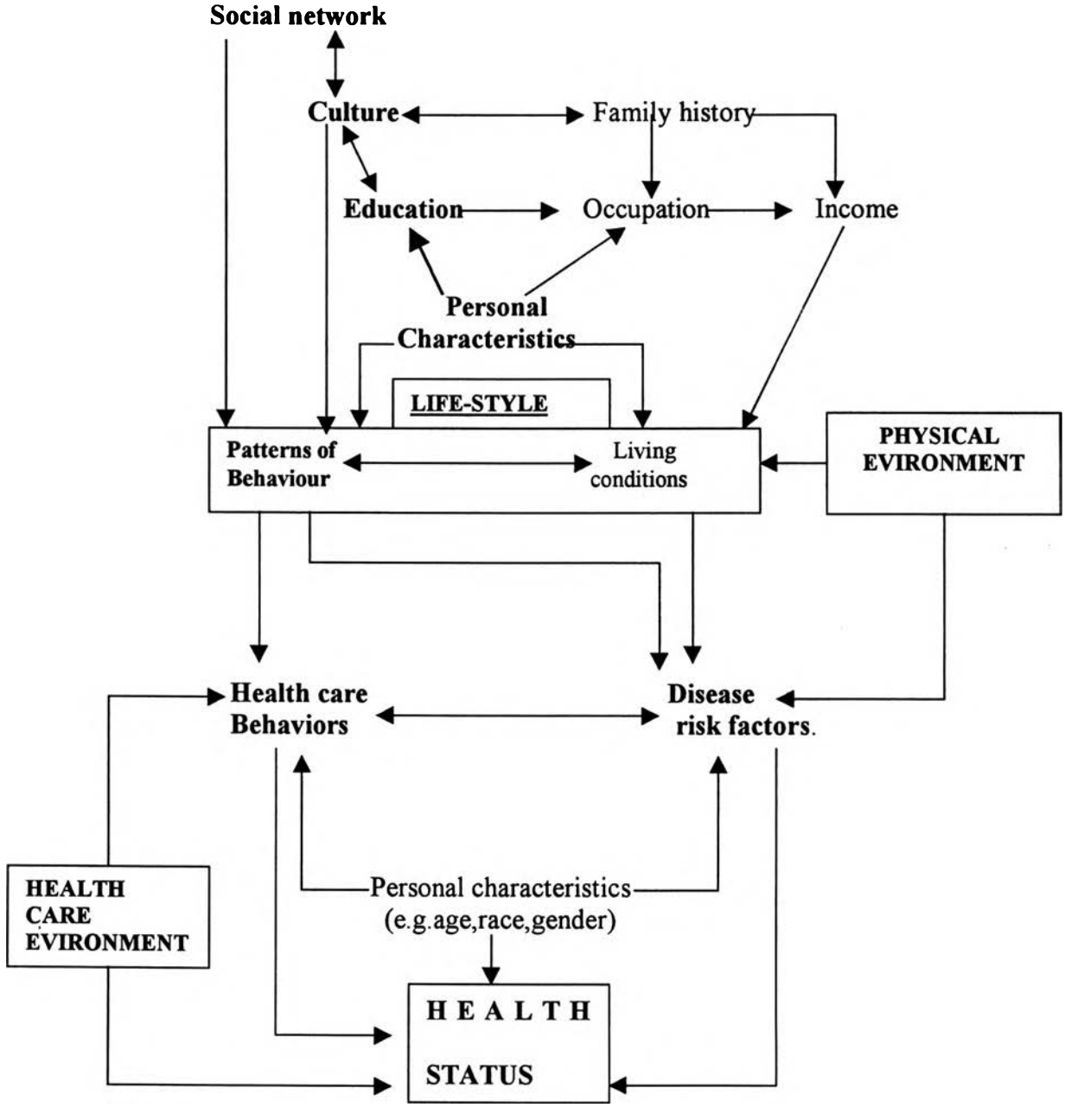
Individuals are responsible for their own care and no amount of persuasion will do good if a person just does not want to attend a clinic with reasons which is best known to herself only. She must be interested in her own wellness and goodness of her unborn child. So it is very important to understand the way a woman perceive the dangers of pregnancy and how they react to those dangers (Zoe, Mathew. et. al. 2001). It was found that among the non-attendees to antenatal clinics mostly were teenagers, unmarried, in unions of very short duration, smokers and women who felt that relatives and friends are not supportive. Among the multigravida non-attendees are those who had short inter-pregnancy intervals and often who had experienced postnatal deaths(McCaw.Binn1995). Education program focussed on wider socioeconomic needs of these women and ways to instill in them the means to make them realize that they only have the power to affect change in their own lives.

Figure 2.3: Factors influencing maternity care, conceptual framework.



Adapted from *Applied strategic planning*. Leonard ,D.Goodstein.

Figure 2.4: **Some interrelationship in the complex system of lifestyle, environment, and health status. Lawrence W.Green et.el.education and lifestyle determinants of health and disease ch.7.vol.1.Oxford Text Book Of Public Health.**



Note: The highlighted words have strong association with ANC.

2.7 Intervention Meaning Action – What tools?

Seizing the opportunity of preventing 75% perinatal deaths, more than 50% of infant deaths and 99% of maternal death improving maternal health and improving nutrition at a total cost of US$.230 for each mother or infant through antenatal, delivery, and postnatal care (The World Bank report 1999), also looking at the cost estimate of providing a standard package of mother baby package at approximately USD.2.60 per woman per year in a low income country (*lowest income is per capita of US$ 350per annum and middle income is US,$ 2500 as cited Peter Tugwell et. al.1995*) and knowing the fact that an additional year to the life expectancy there will be 1% increase in GDP 15 years later(*WHO, The world health report. 1999*) launched the Safe Motherhood initiatives. Some of the components of the safe motherhood are:

Figure 2.5: Essential Safe motherhood Interventions.

A. Prevention and management of unwanted pregnancy.

- Family planning
- Management of complication from unsafe abortion.
- Termination of pregnancy where not against law.

B. Pregnancy-related services.

- *Prenatal care.*

  1. *Birth planning*
  2. *Prompt detection and management and referral of pregnancy complication.*
  3. *Tetanus toxoid immunization.*
  4. *Nutrition promotion, including iron and folate supplements.*
  5. *Iodine supplement where warranted.*
  6. *Management and treatment of sexually transmitted infections, TB, malaria etc.*

C. Safe delivery.

- Hygienic normal delivery
- Detection, management and referral of obstetric complications.
- Facility based essential obstetric care.

D. Postpartum cares,

- Monitoring for infection, hemorrhage,
- Child spacing.

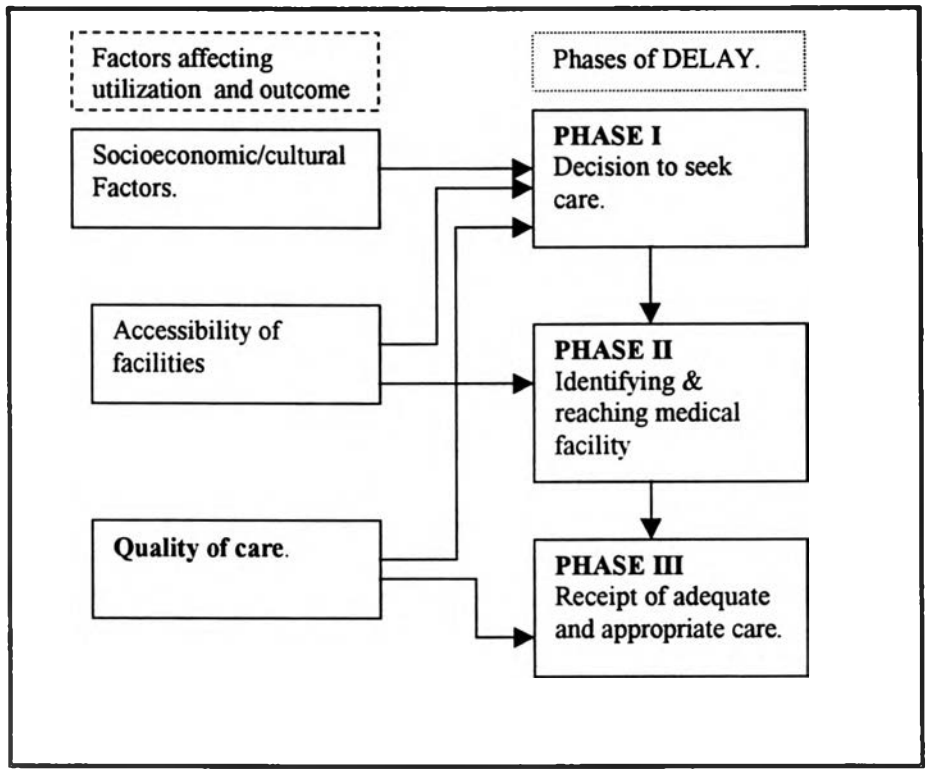
Source: The World Bank 1999.

At the operational level even if there are beautiful plans and the financial resources are unlimited but if there were no properly functioning system in place women would still die. So the realization of the problem by health care provider is very essential. And this demands a great deal from the health care providers. The drugs, equipment and supportive management will need to be in place, this is very often disorganized in most of the developing countries, it is also commonly due to lack of discipline and work ethics.(BT Nasah. et.al.1991).

It is worth considering the concept of three delays (WHO), where the first delay at the decision making to go to facility is due to socio-economic and cultural factors and perception of the clients.

The second delay is due to accessibility or the distance to health facility, which may be due to bad roads, reluctance of people to help pregnant and bleeding women. Third delay, which qualifies all three delays, is at the health facility itself where issue of quality is paramount importance. When women reach the facility after long struggle there are unnecessary delay due to man, machine and medicine. The delay in the facility can not be justified so facilities will have to be ready, and be responsive and respectful of rights of the women.

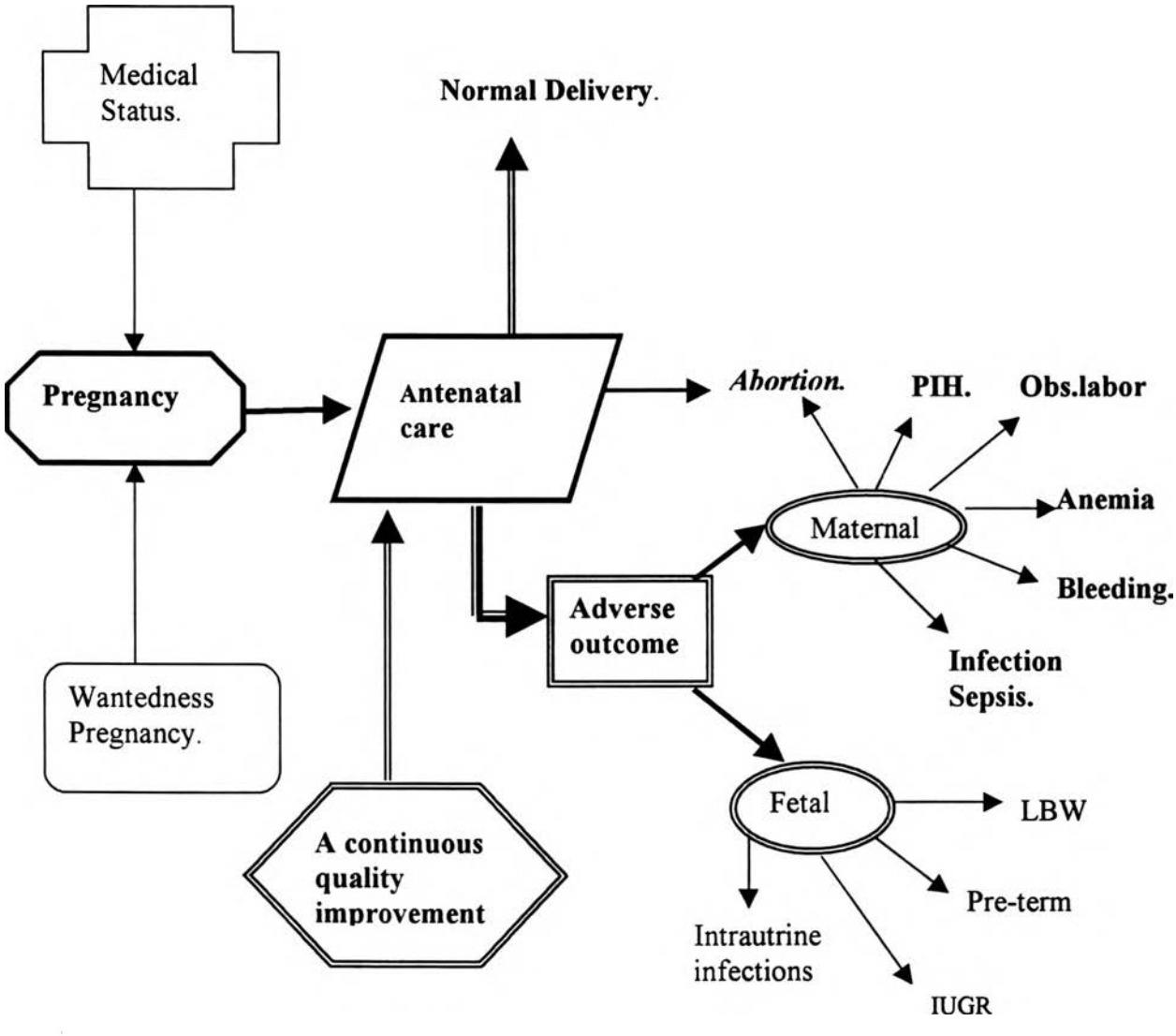
Figure 2.6: Three Delay Model.



Source: UNFPA.2002. pp23.

2.8 What is Antenatal Care?

Figure 2.7: A conceptual framework antenatal care and pregnancy outcomes.



"Prevention is a primary obligation of Public health, not because it saves money, although it will do that in some cases, but it prevents suffering, improves the quality of life, and improves the efficiency of systems. From Hippocrates, who said that the function of protecting and developing health must rank even above that restoring it when it is impaired,to Gandhi who said, ' I am hard-hearted enough to let the sick die....if you tell me how to prevent others from falling sick'. (Ramalingaswami 1990)"

The primacy of prevention,pg.404 ch.24.vol.I challenges to Public health leadership. -William.H.Foege.

Antenatal care is an important point of contact between the health services and pregnant women (Surya et.al.2001) which may help women to make quicker decision about the place of care during emergency. This is also 'umbrella term given to describe to the medical procedures and care that are carried out during pregnancy with an overall aim of healthy mother and baby at the end of pregnancy'. (McDonagh,M.1996) .

Antenatal care concept as very good preventive health care originated from model developed in the early decades of this century in Europe, especially from the United Kingdom. This is in principle a ' series of health examination with predefined content which enables health providers to uncover ailments and other conditions in mother and her fetus(es) which may threaten the pregnancy the condition may then be treated or monitored to secure better out come (Villar,J. et.al.1997).

The objective and definition has been summarized as,

"*Although antenatal care is usually thought of as serving* a purely preventive function, *in practice it operates as* a screening system *to identify pregnancies* at high risk of poor fetal or maternal outcome *in order that the "full force" of the obstetric services can be brought to bear early, before irreversible problem develop. Most obstetric activity is therefore fundamentally curative in intent, in that it seeks to recognize and terminate established disease processes rather than to prevent them from ever starting."*

_Medical care and Public health, Michael ST.Hobbs and Konrad Jamrozik

2.8.1 Delivery Point and Providers of ANC in Bhutan.

The service can be delivered as door-to-door service or from fixed facility. In Bhutan service is delivered through fixed points, hospitals, Basic Health Units, and fixed outreach clinics. In most of the hospitals in districts antenatal care is delivered weekly and in basic health units monthly so is the case with outreach clinics. The outreach as name suggests is the extension of services to reach out to remote areas where the women and children cannot come to health centers because of the distance.

Providers are usually the auxiliary nurse midwife (ANM), Health assistant (HA), Basic Health worker (BHW), Assistant nurse (AN) and General nurse midwife (GNM). All of these categories are trained in the midwifery practices. ANM, HA and BHW are a composite team in a Basic health unit stationed in rural areas. Usually ANMs are ones who will be rendering all routine antenatal and emergency services.

In outreach clinics depending upon the walking distances to cover, male health workers provide the services. The outreach is the furthest from health centers but the nearest to clients.

In larger hospitals the clinic operate every day. So there are very less chances of missed opportunities. The visits are not prearranged. In Regional and National Referral, hospitals gynecologists are available who receive all the complicated cases from other hospitals. But even then in National Referral Hospital the ANMs and GNMs and other categories of health workers see normal cases. Difficult cases are referred to the specialists.

2.8.2 Visits

Visit is the contact made by pregnant woman with the antenatal clinic for consultation regarding pregnancy care. In England woman registers herself early in the pregnancy and makes monthly visits till 30 weeks then fortnightly until 36 weeks and weekly until she delivers (Hall Marion.H; PK Chng. et. al. 1980). This schedule of visit is being followed in Bhutan too.

There are many variations in the number of visits, frequency, and time of contacts. Usually in the industrialized countries first contact is made early in the pregnancy and the average number of visits are usually ten to twelve times during the entire pregnancy and with 100% attendance. In European Union, Luxembourg is an exception with average of only five visits, the Netherlands has between 12 to 14 visits, and Scotland has 14 visits, Sweden 16, Finland 15.2 visits (Villar,J. et.al.1997). The

WHO Technical working Group (WHO 1994) recommended a minimum of four visits for women with a normal pregnancy. This recommendation was made with an intention to focus standard content of care for quality than quantity. WHO randomized trial showed that there were negligible differences between groups (new model with mean of five visits and Standards with mean of eight visits). There are no differences in the primary outcome of low birth weight, preeclampsia, severe postpartum anemia (< 90g/L) and treated urinary tract infection. There was no cost increase and in some setting the new model did not show any adverse maternal and perinatal outcomes. It was recommended that new model of ANC could be implemented without major resistance from women and provider. It may reduce the cost.

Another study conducted by systematic (WHO) reviews of randomized trials on the antenatal care supported the fact that with reduced number of visits with or without goal oriented components could be introduced into the clinical practice without risk to mother or baby, but with some degree of dissatisfaction from mothers. Cost can be lower. In a resource poor setting reduced four visits scheme had shown to be 9-20% cheaper (Zoe Mathews et.al.2001).

It is important to realize that complications due to pregnancy and childbirth can arise any time during the pregnancy so the assessment must be regular. Some women who develop problems need to be assessed and treated as soon as possible. They must be encouraged to attend more often if they have any anxieties or questions. Reduction in number does not mean that women may just need so much but must be adjusted with need.

2.8.2.1 Frequency and timing of visit.

Early initiation of antenatal care is important to prevent and treat anemia, to screen and treat syphilis earlier and to identify and manage medical complications. The first visit provides opportunity to review the medical and obstetric history of the pregnant women (PK, CHNG. et.al.1980). In order to measure the adequacy of prenatal care the first trimester initiation of care, a specified number of prenatal care visit for the gestational age at delivery (Greg.R.Alexender.1996) are important factors. Early care also allows for development of interpersonal relationships between health care provider and pregnant women so that her particular needs and wants are known while drawing up delivery plans. In countries where abortions are legal early contact with health system allows women with unwanted pregnancies to be referred for safe abortion services (WHO.1999).

Marion. H. Hall (1980) found that the early attendees were primigravida but the marital status had pronounced effect, single women and those who were married during the pregnancy appear to attend much later. In Bhutan many do not recollect their last date of menstruation so many tend to attend much later in the second trimester. It is during first visit a full history is taken and an individual birth plan started. On average of 20minutes (WHO 1999) will be required to provide the level of care recommended. This amount is feasible even where the birth rates are very high.

2.8.3 Contents

When a woman makes visits after leaving behind all her engagements and a little baby with another baby sitter, what should we be doing in order to make the visits meaningful is what will be discussed in the contents.

The antenatal care can be with or without goal-oriented but it is important to base contents on the epidemiology of maternal illness in the locality. Perhaps the most crucial point here is that antenatal care should be able to provide pregnant women enough time and empathy without being judgmental. The contents, which are considered ineffective, be avoided saving time for those activities that are known to be effective. Providing time for each woman to discuss her personal needs and for the health care provider to respond appropriately may mean some readjustments in the pattern of service.

The basic concept for the selection of the contents are based on the assessment for any preexisting condition(s) and or might arise as result of pregnancy in the women which will increase the risk of developing complications such as eclampsia, obstructed labor, other medical conditions which might aggravate the problems. Contents also tries to identify the conditions which might give rise to adverse fetal outcome such as low birth weight, intrauterine infections, intrauterine growth retardation, pre-term birth etc. Thus the contents should be relatively sensitive to detect those risk markers which can predict with comfort the pregnancy out come. In our part of world prenatal diagnosis of genetically determined anomalies are far fetched and should not be in the content. The technology should be evidence and need based (Peter Tugwell. et. al.1995).

Figure 2.8: WHO Recommended content, number and timing of visits.

First visit by the end of the fourth month (16 Weeks)

To screen for and treat anaemia, screen and treat syphilis, screen risk factors and medical conditions that can best be addressed in early pregnancy, initiate prophylaxis where required (e.g. anaemia, malaria) and begin to develop the individualized birth plan.

Second visit in the sixth or seventh month (24-28 Weeks) and

Third visit in the eight month (32 weeks)

To screen for preeclampsia, multiple gestation, anaemia, and to further develop the individualized birth plan.

Fourth visit in the ninth month (36 weeks):

To identify fetal lie/presentation, and to update the individualized birth plan.

Source: WHO Technical working group report 1994.WHO/FRH/MSM/96.8

According to WHO the contents of the prenatal care be slotted in three category:

- Assessment (history, physical examination, and laboratory tests
- Health promotion
- Care provision.

ASSESSMENT: During the assessment a complete history is taken which is important to find out clues of her previous obstetrical and medical history which will have bearing to present pregnancy. The information must be recorded for the future references. It also helps to rapidly identify problems and provide criteria for appropriate decisions about care.

The assessment will complete after a good physical examination and laboratory examination for syphilis test VDRL (Venereal Disease Research Laboratory). Hemoglobin test, urine and other tests as indicated. HIV testing would require consent and confidentiality, which is accorded high priority in Bhutan to avoid discrimination, so test, is done in anonymity.

HEALTH PROMOTION: Antenatal is the golden opportunity to initiate dialogue with clients and nurture confidence as well reinforce maternal and child health messages. But this is mostly spoken of but most half-heartedly done activities in the clinics. This component would require skills in communication this has always been a serious constraint for Bhutan as we have very few people trained in health communication skills.

CARE PROVISION: During every visit some amount of care is provided like providing tetanus toxoid immunization, distribution of iron and folic acid, malaria prophylaxis etc. And develop individualized delivery plan, which is initiated during the first trimester and subsequently, reinforced. Besides this other important thing is to render psychosocial support and timing for the next visit.

2.8.4 Scientific basis and utility of ANC.

SCREENING at risk, the main objective of antenatal care is to screen populations of pregnant women regularly for two groups of pregnancy associated risks.

i. Associated with women's medical, obstetrical and social history or circumstances.

ii. Those arising during the prenatal period.

Its sensitivity and specificity measure the effectiveness of a screening test, which are then compared with the gold standards.

It has been shown that the productivity of antenatal visit in respect of intrauterine growth reduction, preeclampsia were 0.2% and 1% respectively (Marion.H.Hall et al. 1980). Kasonga Project Team studies (1984) show that a multipara woman with history of complicated delivery has a risk of life threatening fetopelvic dystocia by 42.4 times and risk of abnormally prolong labour by 10.3. Similarly multiparous women with previous history stillbirth or early neonatal death the risk ratios are 19.8 for those who had life threatening fetopelvic dystocia and 4.8 for those who had abnormally prolong labor. Among the non-engagement of heads as diagnosed by per abdominal examination there were more life threatening fetopelvic dystocia in multigravida. They also showed that primiparous women carry higher risks of abnormally prolong labour but at the second delivery the frequency of life threatening fetopelvic dystocia is the highest (gravida 1-2 high risk). Out of 4772 attendees 156 (3.2%) had bad obstetric history among those nine (5.8 %) subsequently had life threatening fetopelvic dystocia and six (3.8%) had abnormally prolong labour.

It was also found that sensitivity of 41%, specificity of 87% with predictive value of 13% using four maternal risk factors to identify perinatal mortality. They felt that none of the screening tests were entirely satisfactory (Nordbeck.et.al.1984 as cited Mc Donagh.1996).

The assumption that prenatal screening can identify women at risk of adverse outcome and that targeting scarce resources to such groups can effectively prevent maternal morbidity and mortality has lead to adoption of risk approach in the antenatal as one of the key strategies in the safe motherhood initiatives. But studies (Chng et al.1980, Kasonga team 1982, Anne Marie Vanneste.et. al. 2000, A Prual. et al.2000) found risk scoring in pregnancy inconclusive.

The antenatal factors associated with specific adverse outcome in eclampsia are associated with primiparity, antenatal hypertension, proteinuria, tibial edema and large for date uterus. Dystocia is associated with short stature, poor obstetric history, vaginal bleeding, a large for date uterus and antenatal diagnosis of twins. Hemorrhage during and after labor is associated with very few antenatal risk markers except for vaginal bleeding during pregnancy which increases the risk of intrapartum and postpartum bleeding by four folds. Twin deliveries are associated with poor obstetric history, and large-for-date uterus.

Performance of risk scoring is better for specific adverse maternal outcome then for combination of adverse outcomes particularly preeclampsia /eclampsia and twins deliveries. Dystocia and intra or post partum haemorrhages can not be adequately predicted.

Problem remains that identification of the risk does not eliminate or alter the possibility of an adverse outcome or does low risk means the pregnancy will be totally safe. Risk is identified so those women can be referred to appropriate center for

definitive treatment. With such a low predictive value of screening for adverse outcome many women may be unnecessarily referred hence antenatal visit should be specified and base on the evidences like:

1. Multigravida should have full medical examination around twelve weeks of gestation; plan for confinement and to clarify doubts.
2. An examination around 22nd weeks of gestation to detect multiple pregnancy and to establish baseline weight for later weight gain and analysis.
3. An examination at 30th week's gestation to attempt clinical diagnosis of intrauterine growth retardation, weight gain, confirm by ultrasonic scan.
4. Examination at 36th weeks gestation to detect breech or other malpresentation,
5. Examination around full term to assess if induction is advisable.

Primigravida, in whom risk of developing preeclampsia is greater, should have extra blood pressure estimation and urine analysis especially from 34th week of gestation onwards. Thus at risk approach can help drawing criteria for referral as in Kasonga Team Report and also to increase awareness among staffs for close follow up.

Measuring performance of antenatal care by reduction in maternal mortality and morbidity, which of course is the aim, does not measure the ANC processes and is very erroneous. Antenatal will promote level of wellness among pregnant women and control some of the adverse outcomes and calm the transition of childbirth to motherhood and make it a pleasurable one.

Antenatal care per se does not have direct impact on maternal rates and ratios. In order antenatal care to have discernable affect essential emergency obstetrical care (Em.OC) at first referral level should be fully functional and in appropriate place. The antenatal performs within the system of maternal care and has symbiotic relationship with obstetric care, a preventive care and the curative construct of obstetric care.

It is said that adverse obstetric outcome have low predictability and that all women are at risk of an adverse outcome. This assumption has led to shift in the emphasis from universal antenatal care to universal access to emergency obstetric care (Anne Marie et.al 2000).

Preventive care during the antenatal visit other than usual risk detection help mothers build themselves nutritionally, treat for any infectious diseases. The utility of the antenatal care in this has proved to be beneficial.

1). Prevention of tetanus, antenatal service is an opportunity where both the mother and the child are immunized against tetanus.

2). Anemia prevention: About two third of women in developing world suffer from chronic iron deficiency anemia with very adverse effect on maternal health status. (WHO 1992a). In Bhutan routine report show that 77.1% anemia in pregnancy (Annual health bulletin 2000). Hence giving supplemental iron during antenatal care has tremendous beneficial effect on outcome of pregnancy especially low birth weight and prematurity. And studies have found that iron, folic acid, and

malaria prophylaxis given to pregnant teenagers that they grow in height thus reducing their risk of obstructed labor (Harison et.al as cited McDonagh 1996).Research in Indonesia has found that men with anemia are 20% less productive than men without anemia (WHO, The World Health Report. 1999).

3) Malaria prophylaxis: In malaria endemic area malaria prophylaxis and promotional messages must go hand in hand informing the women about the dangers of malaria with special emphasis on malaria and pregnancy should be initiated during clinic session (Ndyomugyenyi et. Al 1998). About 1.3% pregnant women living in malarious area in our country suffer from malaria annually.
4) HIV/AIDS, is rapidly becoming one of the major causes of maternal death thus screening for and counseling women is an important issue. It is also causing concern among the health authorities in Bhutan as numbers of cases of HIV are on the rise.
5) Screening for STI (sexually transmitted infections), sexually transmitted infections, like syphilis, are known for vertical transmission. So early detection of syphilis in the clinic and appropriate treatment will decrease the chances of congenital syphilis. Other types of STIs may need screening and treat them early. And also to start peers counseling and requires reinforcement from the STD/AIDS program, as STI among the reproductively active group are quite high.
6) Screening and treating other medical conditions, for which antenatal may be the only chance to look for medical problems like TB, diabetes

mellitus, systemic hypertension and other systemic disorders. For instance in Bhutan many women come late with rheumatic hearts disease with pregnancy and in severe condition for whom hardly anything can be done for them. Tuberculosis is another problem in Bhutan, which will require close surveillance especially among the pregnant women as it goes unnoticed till it become very severe.

7) Health promotion, antenatal care is the only service which looks after both woman and child. She remains with the system until she delivers and offers opportunity for disseminating health promotional messages, like on tobacco, alcoholism and other risky behaviors. Health education on all spheres of child rearing, sanitation, hygiene, etc can be given. And also we can observe can change in the behavior and attitude as the mother will be bringing her child for immunization. In fact a woman remains much longer in contact with health services than anyone else does so educating and getting feed back from her will be very authentic and reliable.

Thus there are no doubts that antenatal care benefit pregnant women despite low predictability as a screening tool, studies have shown that gestational age-adjusted risk of pregnancy death was 7.7 times higher for those women who received no prenatal care than those who received 'adequate' care (Koonin et. al. 1997). Maternal mortality 197/100000, without antenatal care and 19/100,000 for those with antenatal care was seen in a study in American University of Beirut Medical center, Lebanon, in Vietnam 34% died who attended ANC against 74% who did not (Sundari, S.K.1992).

The antenatal care is adopted from developed world with minor adjustments. However due to inadequacies of resources there are less consistency in the use of norms and standards, this is explicitly seen as irregularly spaced visits with long waiting time, poor feed back to mothers and very little or no communication between antenatal care clinic and obstetric department and maternity care. (Villar, J.et.al.1997). Thus visits tend to be more perfunctory or ritualistic rather than more rational, people have to wait long hours with only few minutes with care providers. No time is routinely devoted to explain concerns of women regarding the procedures. Hence understanding women's medical and psychosocial needs hardly displayed in routine activities of antenatal clinics. Many issues become so medicalized that we forget the women and child part of it and tend to take it as "just a case of pregnancy" so there is need to understand women aspect of whole care. It is time to redefine the quality and set the benchmark for a good care so that utility of ANC increases. So that antenatal becomes cost effective and culturally sensitive intervention tool for safe motherhood. Given the constraints and the situation in National Referral Hospital antenatal care process is similar as quoted by Jose Villar in the ACTA Review 1996:

" It amazes me that women come for prenatal care at all. They sit in these clinics for two hours to be seen for two minutes, with someone laying their hand and they leave. We should be looking why they come at all." -McIlwaine, 1980

2.9 Antenatal Cares and Trained Deliveries

It has been observed that of 68% of women who had made at least one antenatal visit only 57 % had deliveries with trained attendant with marked differences in the developed and developing world. So it leads us to think despite the contact with the health services there is a missing link in our part of world. Is it just the resource constraints or are there some other factors?

Antenatal care is supposed to motivate and help the women plan for the choice of place for delivery and the attendants. So this leads us to diverse issues of use and nonuse of facilities. At one end there is the demand side, and is affected by various client factors as discussed earlier. Other end there is supply end, which is the health service, within which are antenatal care and emergency obstetric care lie. Conceptually the antenatal care, as preventive services need to match up with two for the better utilization of the obstetric services or seek help of the trained personals during labour. In order to understand this intimate relationship we must know the clients level of education which has major role to play. Studies show that education or the general literacy rates of the country also have effect on the people's willingness to choose.

Table 2.3: Antenatal care vs deliveries with a skilled attendant.

Coverage of Maternity care		
Region	**% of pregnant women who make at least one antenatal visit.**	**%of deliveries with a skilled attendant ***
Global	68	57
Africa	63	42
Asia	65	53
LAC	73	75
Europe	97	98
N.America	95	99

Source: World Health Day 7th April 1998

*Doctor, nurses or midwife.

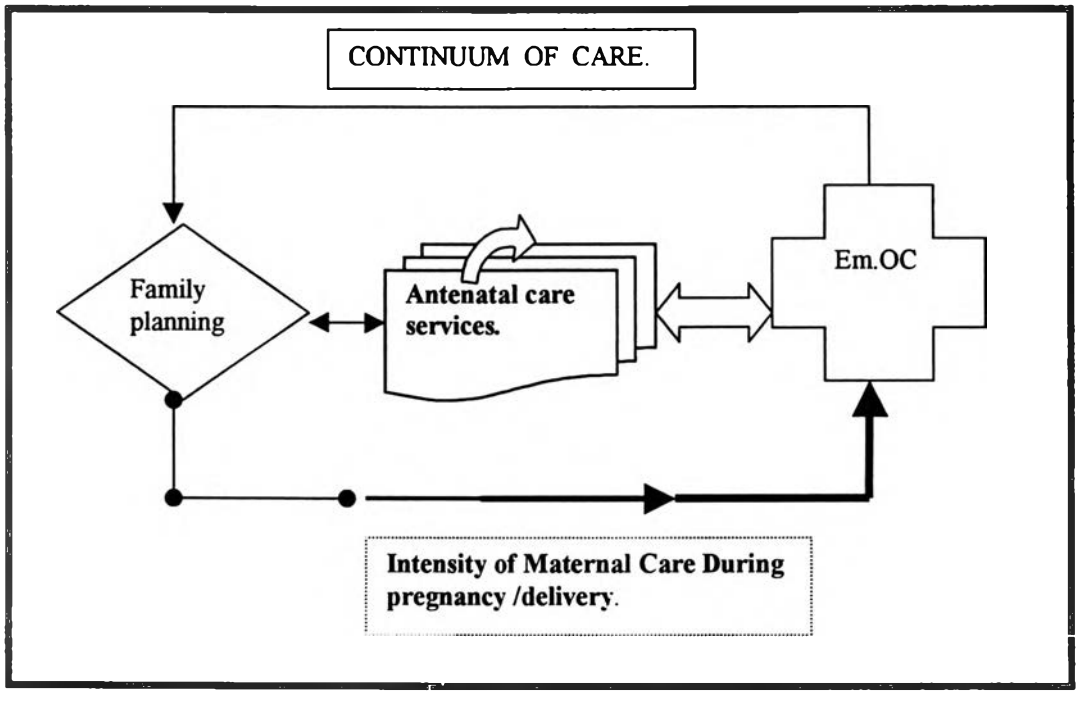
It has been seen that pregnancy outcome is very dismal if uneducation is added on with no antenatal attendance at all (CE Rossiter et al.1985). They reasoned that with no formal education at the first place people would not like to deliver in hospitals and if at all they are brought in too late with detrimental effect. This is supported by the fact that formal education rather than per capita economic production has major impact on birth rate and child survival. As in Indian state of Kerala with one of the highest literacy rate 70% and being one of the poorest states has the lowest crude birth rate and infant mortality rate (CE Rossiter.1985) for other associations are also given in figure 2.4.

Even in oil rich countries like Saudi Arabia a study by al-Moshari (1996) showed that 73% of the maternal death was due to substandard care. It is evident that

antenatal care services can help improve maternal health status and reduce maternal/perinatal mortality and morbidity ratios by enhancing health education, information and focusing to improving the quality of services (Baldo et.al 1995). A holistic approach with less medicalization of antenatal services and focusing on upgrading of personals, equipment and drugs and integrated approach for continuum of care will enhance ANC services (Oosterban 1995). It is worth quoting from Campbell (WHO Stat. Q.1995) that "But if the quality of a particular institution was considered good, and supplies and equipment were available, women would cover great distances to reach such a facility."

Antenatal care would help to increase the access and utilization of the Emergency obstetric care services. Hence it is very essential to have fully functioning obstetric care in place where women can be referred during emergency for safe deliveries. The clients' perspective and quality of care both at the ANC and obstetric care level will determine to greater extent use of the trained attendance during the delivery. Policy will also require to be in place.

Figure 2.9: Continuity of maternal services & Intensity of Care.



Concept drawn from Safe Motherhood WHO/World Bank.

2.10 Referral System and Continuum of Care

"Delivery by midwifery trained personal, availability of and accessibility to emergency obstetric care through effective community-based referral systems, and removing negative socio-cultural factors through advocacy and multi-sectoral social action have been identified as strategic priorities for reducing maternal mortality." (WHO/SEARO 1999).

So down the line it is very important to sensitize communities and women about danger signs of childbirth. It is known that predictive value of any of the risk markers in prenatal period is low. Known causes of maternal mortality- bleeding can occur without any warning. It is therefore, important that women deliver with the assistance of trained personals and close to facility with obstetric care. So antenatal care should include plan for birthing in content and should fit in the individual needs. This will help the care providers respond immediately and prepare the first referral level with expected number of deliveries that is likely to take place in a given period. Such link would reinforce continuity of care as in figure 9. And this will also ensure effective treatment at right time at minimal cost(Susan F. et. al. 2001) For those who do not attend antenatal clinic information regarding childbirth should be given through all possible channels. The key to success of ANC care received would be number responded properly with the number referred. Some of requirements of effective referral are: (Susan F.et.al. 2001)

- Adequately resource referral centers.
- Communication and feedback system.
- Designated transport
- Agreed setting specific protocols for identification of complications.
- Personal trained in their use
- Teamwork between referral levels
- Unified record system
- Mechanisms to ensure those patients do not bypass a level of the referral system i.e. good patient information, and provide incentive to patients.

It is not only in formal referral system, from one lower level to higher center, but also there is need to establish effective communication network between the antenatal care unit and obstetric units. There are no such systems presently in the National Referral Hospital Thimphu. Staffs from the ANC do not know how many of their clients have actually delivered, aborted, developed any complications in the obstetric department. There is no follow up of those who do not turn up. Similarly there are no such systems in obstetric unit from where the ANC attendees admitted were to be informed to the staffs in ANC. So monitoring of referral system with good feedback loop needs to be place (Siddiqi et.al 2001.).

The referral criteria must be drawn up and followed by everyone (Kasonga project 1984).This should be drawn up based on the effectiveness of the screening and the cost involved. According to Kasonga Report the single best indicator is a woman with bad obstetrical history. Thus every woman's risk must be assessed in light of probable risks associated with pregnancy and plan for referral through set channel to a fixed higher level.

In the words of an African Community Leader:(UNFPA 2002)

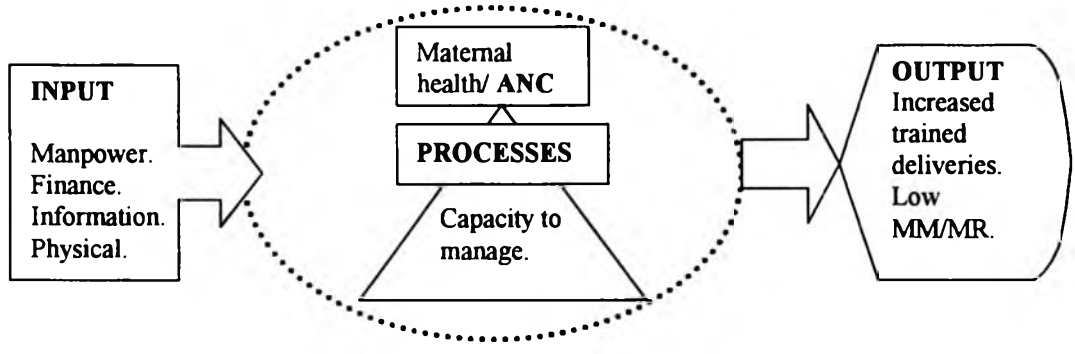
" ***It is cheaper for our women to die at home. You make us send them to the rural clinic when they experience a problem in pregnancy. The clinic sends them to the hospital in the provincial capital. The provincial sends them to the hospital in the capital city. And there they die. And then we have to pay to bring the body back"***

2.11 Quality and ANC Services.

Mc Donagh remarked " thus without quality improvement in the way antenatal is conducted 'ritually performed' with no room for customer focus and active participation in process, prenatal care may not enhance the number of trained deliveries." Hence antenatal has to be seen from conformity to certain gold standards point of view, along with committed management and favorable policy. This will make quality assessment more comprehensive.

In a health care set up whenever we talk of quality we tend to assume sophistication. It need not necessarily be high technology. Health care quality can be as simple as providing appropriate and required care to the right health care consumer in the most efficient manner using current available resources (WHO 2001). So what quality means is " quality calls for leadership, commitment, customer focused, process based, participative management, individual responsibility, empowerment of employees, proactive problem identification, and solution, continuous improvement, a system of employee recognition and interdisciplinarity, and education and retraining." A.F.Al-Assaf (WHO 2001). Thus quality of care management involves the system theory which was applied in the field of Health by Dr. Avedis Donabedian, *as input, process and output* and system performance is drawn based on that.(Ingvar.1998).

Figure 2.10: A framework for analysis for system performance.



So while we are assessing the quality of care we have to look at the context and the type of input and the inherent properties of the processes like organizational capacity, the purpose and the type of technology (standard requirements).

When considering the input we have to look at the availability of the resources. Given the technology if the inputs are not as per the standard protocols we might have to compromise with the desired output so we have to delineate the cut off which will be acceptable or not, which Joseph.M.Juran says, " quality as fitness for use by the customer". So it has to be based on clients needs. In order to give quality of care we have to do 'right thing right the first time and do it better the next time' so there is need to conform to skill required for the precision. In other words we need certain benchmark against which we have to measure the product or the service and say it is quality delivered. Applying this to antenatal clinics we ought to know exactly what we are doing and what are clients' needs. So while assessing the technology one has to look at various components of the antenatal care and find out the variances in it.

While examining the quality issue we have to look at the problems, which are correctable and prevent from reoccurrence. Deming and Juran said that 85% of errors could be system related while only 15% were actually human or worker error. It means that if one would institute a quality system of proper training and in presence of right work environment, these workers will not make mistake. So mistakes happen when system lacks adequate policies, standard procedures and tools. Errors also happens when there is a lack of systematic method to document processes, study them and proactively act on improvement opportunities even before problems could occur. Therefore, a lack of a quality environment is what causes problems to occur and certainly not because of the fault of the workers. But quality encompasses responsibility of every worker to provide quality, practice quality and to ensure improvement in quality the worker can not be treated different from system. It should originate from the system's units and by the system workers.

In provision of social services there is a strong personal element, "the quality of services depends heavily on the attitudes of the provider undertaking it, and it is hard to monitor. Service provisioning further more, often involves a position of power over users" (Mackintosh 1995 as cited by Pamela Hartigan 2001). Thus it is through assessment of skill/information and the performance gap among staffs, will give some picture of what the situation is like. Further more involving the staffs to find out gap by themselves by active participation will give opportunity for continuous improvement in the ways clinics are conducted. This will also highlight the areas required for training and retraining. By instilling a sense of ownership or by being accountable to whatever is done, will foster sense of personal achievement and sense of job satisfaction. Since it

will be the staffs themselves who identify the problems they will also prioritize the solutions too for themselves. There will be higher compliance for activities for solution to the problems they identified through critical appraisals. But this will require support from senior administrators and immediate supervisors. The staffs can continuously assess the following:

- Variance in the established standards
- Appropriateness
- Timeliness
- Availability and functionality: equipment, supplies, drugs etc.
- Workflow /staff utilization/self-motivation and all.
- Structures cleanliness, support of other staffs.
- Client satisfaction

This can be sorted out during their regular meetings and plan for the next situation analysis. This is expected to increase access to responsive antenatal care and making more favorable to clients.

2.12 Current Situation in Maternal (Antenatal) Care Services in Bhutan.

Maternal mortality rate has dropped significantly from 380/100,000 live birth (National Health survey 1994) to 255/100,000 live birth (NHS 2000). But the rate is still one of the highest in the region (South East Asia) the lifetime risk of death from

pregnancy childbirth complication is 1: 9 (WHO/SEARO 1999) which means one out of every nine pregnant women has risk of death. The gross fertility rate is 172.7/1000, Total fertility rate is (women age 15- 49) is 5.6. The crude birth rate is 39.9 (1997 Central Statistical organization of Bhutan).

The National health survey 2000 found that only 51% of women had at least one antenatal care visit. Out of them 72% had their prenatal visit during third trimester, 46% during second trimester and only 16% had during the first trimester, This shows that there is marked delay is initiation of care. This may be due to the fact that most women do not remember their last date of menstruation so there is usually delay in the initiation of care. It also shows that only 23.7% had their deliveries assisted by midwifery trained personal rest 78.3% delivered at home assisted by mothers, mother-in-laws (33.44%), husbands (23.99%) and others (11,1%). The survey did not give the details whether those who went to health facilities for delivery or had sought help from trained persons did visit antenatal care or not. We can presume that most that delivered with assistance from trained persons must have been complicated cases except for few.

The routine reports (annual health bulletin 2000) shows that 55.8% of postpartum complications were due to retained placenta, 19.4 % were postpartum bleeding and 10.9% had fever. The frequent complication during labor was obstructed labor 19.7% of total cases of complication during labor malpresentation was 35.6 (5.7% was transverse lie and 29.9 % was breech) This report also gives alarmingly high percentage of anemia (77.4%) in pregnancy. There are no maternal morbidity reporting system yet. This is largely due to less number of obstetrician and gynecologists. But morbid conditions specially fistulae prevail.

2.12.1 Accessibility and some strategic approaches in Bhutan

Geographical accessibility has always been a problem. The terrain is difficult and population so sparse that the referral and backup services has been a constant source of concern. The National survey had seen that 78.2% of the village have access to primary health services and are reachable within 2 hours of walking distance and 89.01 % of people can live within 3 hours walking distance and only 3.7% live within 6 hours of walking distance. There are 29 hospitals, 160 basic health units and 447 outreach clinics (Health bulletin 2000). Manning these units is a big problem but things are easing now. At present we have 1.7 doctors for 10000 population and 6.9 nurses per 10000 populations. There are problems to fill up specialists' post.

The medical services are totally free of charge in Bhutan. And is surprising that people still do not use the services as desired. It is not only free-of-charge services but also providing people with necessary food and shelter when they come to hospital for any ailment and warrant admissions. Even then they will like to deliver at home where the conditions are no better.

In the forthcoming five year (9^{th} five year) the reproductive health unit of the department of health have ambitious goal of increasing trained deliveries to 50% from present 24 % and increase antenatal visits from 51% to 100%. This is encouraging but whether this numerical goal can be achieved or not as number of years the population took to reach this stage is nearly four decades, so reassessment of target setting will give some insight. Other than setting goals in numbers we might have to go into the processes of the system.

While looking at the issue: whether antenatal does what it is intended for in Bhutan the literature point towards, conformity to set standards or not. So rapid appraisals in Jigme Dorji Wangchuck National Referral Hospital showed that ANC are not proactive and have very routine approach with no birth plans. There are hardly any follow-up on client who fails to show up on the expected date. And there are no interaction between the Maternity ward and the antenatal section. People have to wait more than two hours before they can see a nurse. This is always due to shortage of personals in the clinic both in numbers and expertise.

Clientele comfort is unacceptable. There are not enough benches and the registration area is overcrowded. Privacy in the examination room would require to be improved. In the in-depth interview with a postpartum mother, who delivered after caesarian section told that "antenatal care area is a bit far" but in reality the clinic is about 600metres from the maternity ward, this implies that working relationship between ANC and maternity ward is not well established. Antenatal care area would require rearrangement of space and conduct client flow study.

So seeing into all these there is need to intervene at local level through participatory problem identification and critical appraisal of solutions and act upon them. There may be need to reorganize clinic system and bring more interactions between maternity ward and the clinic. This will synergize both clinics and bring good corroboration. This also enhances interaction between all those who are involved like blood bank, anesthesiology, pediatricians and all.

These types of interactive activities will foster understanding among the units and will increase hospital productivity. And this will also boost the confidence of the mothers.

2.13 Conclusion

Health-illness-care relationship is much in unity in a woman especially during pregnancy. These components must be taken in the context of a very broad framework of woman's health, Van de Kwaak (cited by Mc.Donagh 1996) states " A woman's health is her total well-being not determined solely by biological factors and reproduction, but also the effects of workload, nutrition, stress, war, and migration among other."

Antenatal care despite all the doubts, in the scientific community as lacking scientific basis, it is the only service available for women during pregnancy and the one opportunity to reach women. It is prudent enough to make better of this opportunity and provide a service more appropriate to women's need and be more proactive than being reactive.

In order that antenatal care has any effect, it must be part of a system of care that culminates in good local obstetric facilities with adequately trained staffs. Further, more without these obstetric facilities the possible impact of antenatal care in reducing maternal mortality and morbidity is uncertain. Between 80-85% reduction in maternal mortality rate happen if the first level referral is in place.

Addressing maternal health problems has to cause shift in the mindset of policy makers. Prioritization for resource allocation towards health and more towards cause of women and especially into maternal aspect would make a difference in the care part of women during pregnancy. A very concerted effort towards total care will make large difference in lives of many people (Sundari, SK. 1992).

Antenatal care services can be more effective and accountable if health system is made more responsive to the needs of women through constant evaluative processes of quality improvement. The most important stakeholders–pregnant women, husbands, relatives and the health care providers can enter into a dialogue on a common platform – ANTENATAL CARE and success and failure be measured by a common scale

"For obstetrician and midwives practicing in developing countries maternal mortality is not about statistic. It is about women: women who have names, women who have faces. Faces, which we have seen in the throes of agony, distress and despair. Faces which continue to live in our memories and continue to haunt our dreams. Not simply because these are women in the prime of their lives who die at a time of expectation and gay, not simply because a maternal death is one of the most terrible way to die.....but above all because almost every maternal death is an event that could have been avoided, and should never have been allowed to happened.

Dr.MohmondFathalla, Prof.Obstetric and gynecology, Assiut University,.Egypt ,Addressing the technical consultation on Safe motherhood Sri Lanka , 1997.

REFERENCES

Akpadza,K., Kotor,KT., Baeta.S., Adama,A., Hodonon,AK. (1994). Maternal mortality at the Tokin Lome University Hospital Center from 1990 to 1992.Journal.Revue Franciase-de- gynecologie et d' obstetrique.

Al-Meshari,A., Chattopadhyay,SK., Younes,B., Hassonah,M. (1996). Trends in Maternal Mortality in Saudi Arabia. So. International Journal Gynecology & Obstet.(medline).

Al-Assaf,AF. (2001). Health care quality. WHO publication SEARO No.35.

Alexander,Greg.R., Kotelchuck,Milton. (1996). Quantifying the Adequacy of prenatal care:A comparison indices. Public health Reports.Vol.3/

Baldo,MN., al MazrouY.Y., Farag,MK.,Aziz,KM., Khan,MU. (1995). Antenatal care, attitudes and practices. So. Journal of Tropical Paediatrics.Suppl.41.

Blankkhart,D., Muller,O., Gresengnet.G., Weis,P. (1999). African Republic.: International Journal of STD/AIDS.

Blondel,Beatrice., Josiphe,Marie., Cubizolles, Saurel. (1991). An Indicator of adverse pregnancy outcome in France: not receiving maternity benefit. So. Journal of Epidemiology and Community Health. 45: 211-215.

Bulato,Rodolf,A., Ross,John A. (2001,June). Do health services Reduce maternal mortality? Evidence from ratings of maternal health programmes. *Measure* Evaluation. http//www.cpc.unc.edu/measure.

Byrd,Theresa L., Mullen,Patricia Dolan C., Selwyn,Beatrice J., Lorimor, Roland. (1996). Initiation of prenatal care by Low income Hispanic women in Houston. Public Health Reports Vol.3.

Campbell M., Abu Sham Z. (1995). WHO. StatQ 48(1): 60-6. (Medline)

Central Statistical organization. (March 1999). Statistical Year Book of Bhutan 1997. Ministry of planning. Royal Government of Bhutan,Thimphu. Catalogue 101.

Chng,PK., Hall,Marion H., MacGillivray I (Nov.1980): An Audit of antenatal care:the value of the first antenatal visit. British Medical Journal Vol.281,

Drife,James. (1997). Editorial : Maternity Services :The Audit Commission Report . Listen to women. especially after delivery: BMJ. 314: 844 .

Dujardin,Bruno., Clarysse,G., Creil B. (1995). The strategy of risk approach in antenatal care : evaluation of the referral compliance. Journal Social Science & Medicine.Vol.40 No4. Pp 529-35,

Dujardin, Bruno., Cutsen,Roger Van., Lambrechts Thierry. (1996): The value of maternal height as a risk factor of dystocia: a meta analysis . Tropical Medicine and International health .Vol.I No. 4.pp 510-521.

Eggleston,Elizebeth. (oct.2000). Unintended Pregnancy and women's care in Ecuador. Journal Soc.Sci. Med. Vol.5. No. 7.pp 1011-18.

Enkin,Murray., Keirse,Marc,JNC., Neilson James., Crowther et. al . (3rd.Ed.2000), A guide to effective care in pregnancy and childbirth: Oxford Univ.Press.ISBN.019263173X.

FauveauV., Stewart K., Khan SA., Chakraborty J. (Nov.9/ 1991). Effect on mortality of community based maternity care program in rural Bangladesh. The Lancet. Vol.338.

Fathalla,MF., (2001 Mar) The Hubert de Watteville memorial lecture, Imagine a world where motherhood is safer for all women–you can help make it happen. Journal International journal of Gynaecology and obstet. 72(3) 207-13.

Gabay,Marry., Sidney M. (Sept.1997). Nurse midwifery. The Beneficial Alternatives. Public Health Reports vol. 112. No.5.

Goodstein,Leonard D., Nolan,Timothy M., Pfeiffer J.Williams. Applied Strategic Planning: A Comprehensive Guide. (n.p.): McGraw-Hill Book Co. 1993.

Hall, Marion H., CHNG. PK., MacGillivray.I. (July12,1980). Is routine Antenatal care worthwhile? The Lancet.

Handler, Arden., Issel, Michele., and Turnock Bernard(Aug.2001). A conceptual Framework to measure performance of public health system. American Journal of Public health.

Hartigan, Pamela. (2001). The importance of gender in defining and improving quality of care : Some conceptual issues. Jn. Health Policy and planning. 16 (suppl.1) pp 7-12.

Health Services, Department. (2000). National health survey. Ministry of Health and Education, Royal Government Of Bhutan.

Health Services, Department. (2000). Annual Health Bulletin 2000. Ministry Of Health and Education , Royal Government of Bhutan.

Health Services, Department, 2001. 8th Five Year Plan midterm review. Health Sector Royal Government of Bhutan.

Hijab, Nadia. (2000). Course 6. Reducing Maternal Deaths. Selecting Priorities tracking progress: Module 1-3 . UNFPA (Unpublished).

Hull, FM., Westerman RF., (2.Aug.1986). Referral to medical outpatient department at teaching hospitals in Birmingham and Amsterdam: British Medical journal vol.293.

Huntingtoon,Jane., Connell,Frederick(Aug.1994) Sounding Board. For every dollar spent –The cost saving argument for prenatal care . New England Journal of medicine vol.331. no.19.

Jaffre, Yannick., Prual, Alain. (1994). Midwives in Niger: An Uncomfortable position between Social Behaviors and Health care Constriants. So.Sci.Med. Vol.38. No. 8.pp1069-1073,

John.A., Dar-IangM., Shah U., et.al. (2000). Maternity care in rural Nepal: A Health service analysis. Tropical Medicine International Health.5(9)657-65.

Kasonga Project Team (1984). Antenatal Screening for fetopelvic dystocia .A cost-effectiveness approach to the choice of simple indicators for use by auxiliary personnel. Journal of Tropical Medicine and Hygiene .87. 173-183

Koonin, LM., Mackay AP., Berg, CJ., Atrash, HK., Smith, JC. 1997. Pregnancy related mortality surveillance USA. 1987 –1990. Journal Morbidity and mortality weekly report CDC, Surveillance Summaries. Medline®

Lie,Rolv Terje., Svein Rasmussen ., Brunborg,helge.,et.al. (1998). Fetal and maternal contribution to risk of preeclampsia.A population based studies. British Medical Journal.vol.316.

Lilford,RJ., Chard,T. (Jun.1983). Problems and pitfalls of risk assessment in Antenatal care. British Journal of Obstet.& Gyncol. Vol.90. pp 507- 510.

Lindmark,Gunilla and Cnattingus (1991). The Scientific basis of Antenatal Care: report from a state –0f-art conference. Acta.Obstet.Gynaecol.Scand. 70.

Mathew,Zoe., Mahendra,Shanti., Kilara,Asha., Ganapathy,Saraswathy (Jun.2001). Antenatal Care, Care seeking and morbidity in rural Karnataka, India: Results of a prospective Study. Jn.Asia-Pacific Population. Vol 16. No. 2.

Mayank,Supriya., Bahl,Rajiv., Ratan Ashok., Bhandari,Nita., (2001). Prevalence and correlates of morbudity in pregnant women in a urban slum of New Delhi. Journal of Asia-Pacific. Vol.16. No 2. Pp29-43.

Mbaruku,G., Bergstrom,S., (1995). Reducing maternal mortality in Kigoma,Tanzania. Jn.Health Policy and Planning.10(1):71-8.

McCaw,Binns., Affette. 1995. Under-users of Antenatal care: a comparison of nonattender and late attenders. So.Sci.& Med. Vol.40. No.7 pp 1003-12.

McDonagh,Marilyn. (1996). Is Antenatal care effective in reducing maternal morbidity and mortality ? Article Review. Health Policy and Planning. 11(1):1-15.

Murray,Susan., Sarah Davies., Rosemarry,kumweda., Phiri and Yusuf Ahmed 2001. Tools for monitoring the effectiveness of district maternity referral system: Health policy And Planning 16(4) : 353-361.

Munjanja,SP., Lindmark,G., Nystrom,L. 1996. Randomised control trail of a reduced visits program of antenatal care in Harare. Zimbabwe. The Lancet 348/ (9026) 364-9.

Nash,BT., Lek,RJ., Doh,AS., et.al. 1991. The Risk Approach for reducing maternal mortality : the Yaounde experience. International Journal Gynaecology & Obstetrics 36.p195-201.

Ndyomugyenyi,R, Neema,S., Magnussen P 1998, The use of formal and informal services for antenatal care and malaria treatment in rural Uganda. Health policy and planning 13(1):94-102.(EBSCO Online).

Obermeyer,CM., 1993, Culture, maternal health care, and women's status: A comparison in Morocco and Tunisia. Journal Studies in Family Planning 24 (6pt-1) : 354-65.

Oslen, Ingvar Theo. 1998. Sustainability of Health Care: A framework for analysis: Health Policy and Planning. 13(3): 287-295.

Oosterban,MM. 1995. Maternal mortality assessment.WHO Health Stat Q.48(1) 39-43.

Oxford Textbook Of Public Health.3rd Edition. 1997.in 3 volumes.

Planning Ministry. 1997. 8th Five-Year-Plan Document. Royal Government Of Bhutan.

Pan American Health Organization PAHO/2000. Principles of Disaster management in Health facilities: PAHO/WHO Disaster mitigation series.

Rooks Judith P. Ruth Watson Lubic. Midwifery : Chapter.22. "Critical issues in Global Health".

Rumeau.C., Ronquette Marie., et.al. 1997. Women's Health. Textbook of public health vol.3.

Rossiter,CE., Chong H., Bano,Q., Briggs,ND., Ekwempu.CC., Memberr,MT., 1985. Chapter 3.Antenatal care, formal Education and childbearing: British Journal of Obstetrics and gynecology .Suppl.5. p14-22.

Siddiqi,S., Keilmann AA., Khan,MS., Ali,Nabella et.al 2001.The effectiveness of patient referral in Pakistan Health Policy and planning 16(2):193-198.

Sikorski,Jim., Wilson,Jennifer., Clement.Sarah et.al. 1996.A Randomised Controlled trail Comparing Two Schedules of antenatal visits : The Antenatal Care Project. British Medical Journal 312: 546-553.

SrinivasanV., Radha Krishna,S., Sudha,R., Malathi,MV., Jabber, S et al 1995. Randomised Control field trail of two antenatal care package inn rural South India: Indian Journal of Medical Research.

Sundari, TK. 1992.The untold story : How the health care system in the Developing countries contribute to maternal mortality. International journal of Health services.Vol.22 No.3, pp 513-526.

Thassi,J., Kala,N., Chusingtong,L., Phongthanasarn J., Boomsirat,S., Jirojwong,S. 2000. The Development and evaluation of a Health Education Program for pregnant women in a regional hospital , Southern Thailand. Journal of Advance Nursing .32(6):1450-8.

Tugwell,Peter., Sitthi-Amorn,Chitr., O'Connor, Annette. 1995. Technology Assessment : Old, New and need-based. International Journal of Technology Assessment in health care. 11:4(1995) 650-662.

Vanneste,Anne Marie., Ronsmans, Carine., Chakraborty,Jyotsmoy., and Andres,DC, 2000. Prenatal Screening in rural Bangladesh : from prediction to care: Health Policy and Planning 15(1):1-10.

Villar,Jose., and PerBergsjo 1997.Scientific Basis for the content of routine antenatal care.1. Philosophy Recent studies ,and power to eliminate or alleviate adverse maternal outcome. Acta.Obstet. &Gynaecol. Scanda. 76.1-4.

Walsh,JA., Measham AR., feifer,CN, Gertler PJ. 1994. The impact of maternal Health improvement on perinatal survival : Cost-Effective alternatives. International Journal of Health Planning Management 9(2) : 131-49.

Winstoms,Carla A., Oths,Kathryns. 2000.. Seeking early care : The role of prenatal care advocate. Medical anthropolgy Quarterly vol.14. No.2. pp 127-37.

World Bank,1999. Safe Motherhood and The World Bank: Lessons from 10years of Experience . The World Bank ,Washington DC.

World Bank Group. Making Pregnancy safer. http//www.worldbank.org.

WHO 1999. Health situation in the SEA Region (1991-1997) : SEARO/1999.

WHO 1999. The world health report, *making a difference*, WA.540.1

WHO 1994. Antental Care :Report of a Technical Working Group .

WHO/FRH/MSM/96.8.

WHO Making Pregnancy Safer Initiative: Document for Discussion. http//www,who,int/reproductive/index.

WHO 1998, World Health Day(7th. April). *Safe Motherhood.* Improve Access to maternal health Services.(WHD.78.7)