Chapter 10

Preventing matenal mortality: The international debate and current thinking

10.1 Modes of prevention

Maternal mortality is largely preventable. How to prevent it most effectively remains a controversial issue, eight years into the Safe Motherhood Initiative. The debate about modes of prevention turns on two different models about risk; one approach is to separate high risk women from low risk women while in the second, emphasis is placed on developing emergency facilities because a risk model cannot cover all women. There is also a third strand to the debate which is essentially a critique of how reductions in maternal mortality were brought about in the course of this century in north Atlantic countries. The insights from this critique have fed into the development of a social definition of pregnancy and birth which has challenged the medical definition and therefore has insights relevant to the work of this project. Hence it is appropriate to begin with a brief summary of this critique.

10.2 The reduction of maternal mortality: medical or social factors?

Feminist historians and historical demographers have attributed the dramatic fall in maternal mortality in the north Atlantic countries (Europe, Canada and the United States) during this century to factors such as improved nutrition and general health status, fertility control, including contraception and safe legal abortion, and the control of infectious diseases (Oakley, 1976; McKeown, 1988; Tew, 1990). The other factor was the enforcement of an aseptic regime in hospitals and the introduction of antibiotics to control infection after birth from the late 1930s. Mortality rates in hospitals, where medical intervention was the norm, or with doctors in attendance outside hospital were strikingly high when compared with death rates among caseloads handled by midwives alone (Shorter, 1983; Tew, 1990).[1] Antibiotics helped reinforce the importance of an asepsis among doctors as did reviews and confidential enquiries into maternal deaths and a tightening of hospital practices and training (Tew, 1990). All these developments brought down maternal death rates from puerperal fever or

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1 In 1885, it was noted by the English statistician, Dr William Farr, that in central London districts, 1 in every 212 women giving birth at home died, compared with 1 in 29 women in Westminster Hospital (Oakley, 1976: 46). Those kinds of ratios continued into the mid-1930s when Prontosil, the first antibiotic, was introduced.

septicaemia and made it possible to argue for the expansion of hospitalised childbirth. But this did not make hospitalised care any better and there is absolutely no evidence to suggest that hospitalised childbirth became safer than birth at home as women became healthier in general (Tew, 1990; Campbell and Macfarlane, 1987). Rather antibiotics enabled doctors to continue the expansion of interventions in the birth process because they could now counteract resultant levels of damage and infection.[2]

The rise in hospitalised childbirth was linked to moves in a number of north Atlantic countries to regulate maternal health.[3] In England and Wales, for example, from 1924, the National Secretariat of Health policy was to encourage medically-monitored antenatal care and birth in hospital. The number of clinics providing antenatal care expanded from fewer than 1,000 in 1915 to over 4,000 by 1945. Although there were continuing admonitions about the lack of attendance and the need to encourage women to participate, the number of women attending increased steadily throughout the century and more especially once hospitalised birth became the norm (Oakley, 1984: 80, 301-303). However, as early as 1932, there were critics querying the claim that antenatal care would bring about a huge drop in maternal mortality. The latter had not come about and, despite a routine of screening, many conditions were going undetected. In the 1980s critics were still asking whether these long accepted practices were based on valid assumptions and they were not receiving satisfactory answers (McDonagh, 1996: 10). The percentages of women confined in hospital rose steadily from 15% of live births in 1927. The target of 70% hospitalised birth was set in 1959 and reached by 1965. Total hospital confinement became the policy in 1970, stemming from the Peel Report, and by 1979, the figure for hospitalised birth was 98.5% (Kirkham, 1983: 81-82). But, as with antenatal care, the Peel Committee was unable to produce any evidence to back its claim that hospital birth was safer than home confinement (Campbell and Macfarlane, 1990: 220). The English case is exemplary of similar trends elsewhere in developed economies. Nevertheless in what has been seen as a struggle for professional dominance, the move towards complete hospital confinement was accompanied by moves to progressively limit the scope of community midwives as well as midwives in hospitals and to expand the role of obstetrics in normal birth. In some countries,

2 Studies from Scotland (the retrospective Aberdeen study) and the United States in 1929 and 1930 indicated that despite an increase in hospitalised birth, maternal mortality rates and birth injuries had risen in hospital whereas mortality rates dropped outside the hospital. See Mason, 1988: 114-5.

3 The Netherlands was the single exception to this trend in developed economies where hospitalisation of birth as a policy never became central to its maternal health schemes. Although hospitalised birth has expanded in the last thirty years, it has not been at the same rate of growth and it has taken a somewhat different form. The Netherlands continues to encourage a fully independent midwifery service and some 35% of all births remain home confinements (Tew, 1990; Wagner, 1994).

midwives were actually declared illegal. This was the position in many parts of the United States for example, where by 1930, midwifery had been virtually stamped out (Gaskin, 1988a). In Canada, women midwives struggled throughout the century with laws that criminalised midwifery and have only recently achieved getting criminalisation lifted and their work given the legal status as a profession (Mason, 1988). In an interesting parallel to the problem of maternal mortality, poverty and ill-health in many Third World contexts, including Bolivia, unlicensed lay midwives operated throughout the rural south and southwest of the United States in black, Indian and Chicano communities. It was estimated that there were 20,000 such women working in 1948 and that midwives attended 49% of all non-white births in the United States. Because of their role in attending women who otherwise could afford no medical care at all, individual states were slow to outlaw them and even supported their work (Myers-Ciecko, 1988: 66-7).

Feminists calling for more responsive health care policies and even some obstetricians have argued that midwives continue to play the most crucial role in preserving maternal health and life, not least because historically, midwives have developed sets of skills that do not rely on operative obstetrics in all its various forms. No matter what their individual cultural traditions, midwives have quite simply seen the female body in pregnancy and birth as a different entity to the obstetric model, which is based on intervention. This has resulted in radically different approaches to supporting women during labour and led to the conclusion that 'without the presence and acceptance of the midwife, obstetrics becomes aggressive, technological and inhuman' (Professor J.G. Kloosterman, quoted by S. Kitzinger in *The Midwife Challenge*, 1988).

But whereas obstetric practice no longer threatens women's lives with puerperal sepsis,[4] it is evident that as a science it has too often been 'following the wrong clues to the wrong solution' (Tew, 1990: 35). The drop in maternal mortality rates after the 1930s, emerged in the same period that the rates of hospitalisation began to rise. These two factors were assumed to have a direct relationship by obstetric science. Yet claimed advances in obstetric care have most often not been evaluated and have not necessarily been the sole reasons leading to the reduction of maternal morbidity and mortality. We have discussed this issue of evaluation in Chapters 4 and 7. Here it is necessary to say that the drop in mortality rates, both maternal and perinatal rates, which have characterised national profiles in north Atlantic countries,

4 However, the rising rates of Caesarean section are a cause for concern because the operation increases the risk of maternal mortality four-fold and maternal morbidity is always higher than with vaginal delivery- see Wagner, 1994: 183-5; Enkin et al. 1995: 286-7.

were a) multi-factorial and b) often in spite of specific obstetric management policies than because of them.[5]

This argument about the normality of birth, about the importance of midwives in guaranteeing that normalcy, *so long as women have good general health to begin with*, has led to a sharp reversal of policy in England, after seventy years, for example. By the mid-1980s, a review by the National Perinatal Epidemiology Unit of the evidence on place of birth and the arguments about the safety of hospital birth concluded that 'the most persistent and striking feature of the debate about where to be born... is the way policy has been formed with very little reference to the evidence' (Campbell and Macfarlane, 1987).[6] The latest government review of the maternity services in England has stated that 'the policy of encouraging all women to give birth in hospital cannot be justified on grounds of safety' (Health Commitee, House of Commons, 1992: xciv).

A retraction of this magnitude is important because the perspectives and principles of obstetric science have arisen largely within developed western/north Atlantic countries. It presents an invaluable opportunity to take stock that reformers of the biomedical model of care have long sought (Wagner, 1994). But although formal painstaking evaluation has now become an explicit issue in reassessing obstetric care and management practices, the weight of received opinion remains heavily in favour of developing obstetric care systems elsewhere in the world on the basis of the experience of these countries, even though the lessons of these experiences are not clearcut.[7] In the case of *Plan Vida* for Bolivia, it seems that the desire to increase delivery in hospital (*Ministerio de Desarrollo Humano, Secretaria Nacional de Salud*, 1994a: 40) reflects this latter pattern. As already noted, the presence of

5 Retrospective studies of perinatal mortality rates and specific management policies like induction have found a negative correlation, not a positive one and controlled trials were never run to single out the instances where such interventions were beneficial and where not (Tew, 1990: 262-266).

6 The authors point out a similar problem with perinatal mortality statistics. Studies carried out in the mid-1970s suggested that the relationship between a reduction in perinatal mortality and an increase in hospitalised birth was a spurious one but as this view was not the received wisdom at the time, the findings of three separate studies were ignored (Campbell and Macfarlane, 1990: 221).

7 Studies on specific aspects of obstetric care have been part of the research scene for many decades. But the move in the last two decades has been towards the evaluation of controlled trials and the development of meta-analysis. This has been greatly helped by database facilities and a major outcome of this has been the systematic review of obstetric care known as Effective care in pregnancy and childbirth (Enkin et al. 1989), a compendium of studies since 1950. This has now been incorporated into the Cochrane database of systematic reviews as the Cochrane pregnancy and childbirth database which is updated annually. The Cochrane database gives practitioners a vital overview whereby they can rethink their judgements about the usefulness of individual practices and policies and what their real contributions to maternal health are, as distinct from what might be claimed. One of the valuable dimensions of this work is that it separates practices into the categories of beneficial, ineffective, harmful and unknown effectiveness. This is the same breakdown which has been applied to the non-biomedical practices (see for example Kwast's papers on maternal mortality), used by empirical midwives, and it is useful to have the same categories for both areas of medical attention regarding women. The problem is that the latter have had minimal evaluation.

professionally trained midwives is minimal during labour and birth in Bolivian hospitals in any case.

In one critique of maternal health policies during this century, it is argued that 80% of the drop in maternal deaths can be attributed to the factors stated above —better nutrition, better housing, better general health, the increasing ability of women to control their own fertility— while 20% can be attributed to the services of blood transfusion and the availability of basic medical resources, such as ergometrine to arrest postpartum haemorrhage and emergency Caesarean section (Wagner, 1994; personal communication, Marsden Wagner).[8] If this ratio is in anyway accurate, the claims by medicine of what it can accomplish for women are overstated. Nevertheless, the medical claims are convincing and they weight the argument heavily in favour of medicalised birth and in the use of inappropriate and often capital-intensive birth technologies (ibid.: 38-9).

What feminists have been arguing is that the structures of official maternal care provision must reflect the necessity of intervening in women's lives to reduce the number of women living in extreme poverty. Dealing with poverty ultimately means lifting the burden of ill-health and the threat of death from women' s lives. The origins of this for the individual woman can be traced back to the earliest years of a young girl's life when her access to food is already unequal to that of a boy child. During her reproductive years, the combination of lack of fertility control, multiple responsibilities for the family, including onerous physical labour, and continuing diminished access to food increases her vulnerability to malnutrition (Merchant and Kurz, 1993). At present, although the relationship between poor nutritional status of women and poor pregnancy outcomes is recognised, it is impossible to estimate how many millions of women are affected this way (Koblinsky, 1995a: S28). The enormous task of responding to this health crisis is, in one sense, beyond the scope of conventional maternal health programmes but only because they have chosen not to address it. Merchant has argued that at present, the nutrition component of Safe Motherhood programmes is especially weak, the temptation being instead to rely on the seeming success of a 'strong "Western" model of health care where curative

8 This argument about good general health is currently borne out by an examination of perinatal mortality rates by social class. In England and Wales, Ireland and the United States, there is a three-fold to five-fold difference in the PNMR between women from the lowest and highest social classes. This ratio has not altered throughout this century even though the actual rate of perinatal mortality rate has dropped dramatically overall (Illsley et al., 1966). The English Commons committee reporting on the maternity services, commented on this gap and write that improvements in this ration would bring down the PNMR but not through improved use of high technology in the birth process so much as through improved social support for women who are most marginalised by poverty and social class (Health Committee, House of Commons, 1992: lxv). It is highly improbable that similar kinds of relationships do not hold for countries like Bolivia where the vast majority of women are living and bearing their children in poverty.

treatment by highly trained personnel using modern technology is available' (Merchant, 1993: 41). In her background submission to the World Bank on policies to improve nutritional status, Merchant points to the extant research on stunted and deformed pelves which are the direct result of chronic life-long malnutrition. She suggests that the impact and incidence of these and other complications such as postpartum haemorrhage and eclampsia will be greatly reduced if nutrition is put on the agenda of primary health care. For her, the error is to see obstetric complications as the starting point in the debate on maternal mortality for this destroys the emphasis on developing primary health strategies, including good nutrition.[9]

The other requisite element is the provision of birth attendants and techniques which are supportive but non-invasive. A far-reaching series of conferences to look at birth in all its aspects, to include all the stakeholders was held by the WHO in the mid- 1980s, at a point when the conflict over control of the birth process in American and European (north Atlantic) countries had reached new heights with the proliferation of birth technologies which claimed in one form or another to reduce a series of birth-related risks. The problem of appropriate technology in birth was probably the most controversial of the three and was the focus of the conference in Fortaleza, Brazil in 1985 (Wagner, 1994, Ch. 6) Two very different international profiles were presented: the north Atlantic countries where there has been a sharp erosion of the role of the midwife in tandem with the increase in hospitalised births which are actively managed; and the Latin American countries where there is a surplus of doctors, where midwives have very low status and where empirical midwives from other traditions of medicine rarely have official recognition, making it impossible for them to liaise or refer to biomedical institutions. The convergence between these two profiles is inappropriate use of technologies and of human resources in a situation where a pathological concept of the female body dominates. Most biomedical practitioners no longer understand what normal birth is because they are viewing it through this pathological lens. As a result, their interventionist policies dominate maternity care, not least because they are perceived by policy makers and others as the experts at the pinnacle of obstetric knowledge. Thus the indications for intervention expand while the benefits that technologies bring diminish; meanwhile the hazards of using them remain constant. When obstetricians are in control of the birthing process, normal birth and the caretakers of normal birth are pushed aside. Hence the WHO advice to turn over routine birth management to midwives. The definition offered by midwives at Fortaleza, that 'birth is normal if it is seen as normal by the woman involved, if it mirrors her way of living' (Wagner, 1994: 113) puts women at the centre of defining

9 In an appendix to a 1994 paper extending the analysis of affordable and effective health care for women, the authors (Tinker et al.) include a list of recommended interventions and indicators of women's health and nutrition.

what is appropriate for birth. This is an unacceptable political shift for the obstetric profession but essential for the social model of birth.

The link with the issue of maternal mortality is the urgency to have concrete and accurate assessments of *which* aspects of obstetric care are truly relevant in the reduction of women's deaths and whether these are applicable and sustainable at the level of the local community, working with and through local knowledges. Delegates to the third WHO conference on appropriate technologies following birth also stated explicitly in their summary declaration that poverty remains the greatest single threat to the health of women and that 'in the absence of concerted measures to promote social equity, little improvement can be expected in maternal and infant mortality and morbidity'. Because the burden of higher death rates falls on the most disadvantaged communities who have least access to state health care, delegates concluded that direct spending on health services nationally and locally might not be the highest priority (WHO, 1986). It was a courageous declaration, questioning the unquestioned assumptions of public health policy that the provision of medicalised maternal care is a sufficient response, given the lack of concerted policies to tackle the continuing existence of poverty. There has been no substantive effort to integrate the objective of improving women's nutritional status into the Safe Motherhood strategy (Merchant, 1993: 45-6). Yet it is in the best interests of women for policymakers to develop definitions of health which take in her material and concrete circumstances. This definition by Van der Kwaak, quoted by Koblinsky gives the lead: 'A woman's health is her total well-being, not determined solely by biological factors and reproduction, but also [by] the effects of work load, nutrition, stress, war and migration, among others' (quoted in Koblinsky et al., 1992: 31).

10.3 High risk/low risk models of predicting maternal mortality

It has been argued that the threat of death in childbearing is the same for women in the Third World now as it was for women up to the first third of the 20th Century in north Atlantic countries. Excess is one way to sum it up: too young, too old, too many, too close together are the demographic factors which have been identified. Women who are at the extreme limits of their reproductive years, having the most pregnancies suffer most, especially when they are subject to poor nutrition, poor health and extremely hard physical labour (Royston and Armstrong, 1989: 36). The WHO also identifies the immediate medical factors, then and now, as no knowledge of sepsis, no Caesarean sections, no transfusions and no antibiotics (ibid.).

So the lack of specific social and medical knowledges in addition to age and parity can provide an explanation for why mortality rates are high. But who is most vulnerable to death? Does it seem likely that some women are more likely to die than others, and if so, is there a way to identify them?

The attempts to answer these questions lead to a risk model of pregnancy and birth in which these relevant factors are identified and isolated. The argument is that interventions based on these identifying factors can then be set in place. Epidemiological tools for measuring risk should try to predict the chance of someone with a risk factor having a worse outcome than someone without that risk factor, by developing measures of association to demonstrate the strength of a particular association (MotherCare, 1991a). However, the risk schedules used in practice are rarely that precise. Commonly recognised demographic risk factors in international health care literature are: five or more previous pregnancies, first pregnancy, age younger or older for optimum childbearing, small stature, low weight at the outset of pregnancy, previous instrumental delivery, complications in a previous pregnancy, existing medical disorders, previous perinatal death (Royston and Armstrong, 1989: 159). These are broad categories and they overlap with one or more factors coming into play. Also, because, they do not necessarily reflect all local circumstances and variants, their usefulness can be diminished.

In 1991, the Bolivian government published a schedule of risk factors, *Sistema Informativo Perinatal/Bolivia*, which were subsequently included in the guide *Normas Nacionales para Atención Integral al Niño, al Escolar, al Adolescente y a la Mujer* (*Ministerio de Previsión Social y Salud Pública*, 1992). This manual is issued to all medical personnel working with maternal and infant health and personnel are instructed to establish women's risk ratings with each antenatal check. Bolivian health officials, like their counterparts elsewhere, argue that the frequency and quality of antenatal care are essential to improving maternal health and they aim to raise cover to an optimum of four to five times during pregnancy (*Instituto Nacional de Estadística*, 1994: 89; *Plan Vida*). The problems are many, however. Currently only 50% of pregnant women attend state health facilities with an average of 1.9 visits (*Instituto Nacional de Estadística*, 1994; Bolivia, *Ministerio de Desarrollo Humano*, SNIS, 1995). In a situation where resources are limited, where antenatal take-up is not at particularly high levels, what factors should be selected for screening? Royston and Armstrong (1989: 159) and Maine (1991) point out that if women are referred from health care facilities lower down the chain to those higher up and it proves to be a false alarm, women lose confidence in the referral process. The former argue that

there must be a strong association between a risk factor and a possibly fatal outcome before referral takes place for this reason (Royston and Armstrong, 1989: 159).

First pregnancy and/or younger than optimal age for childbearing provides an example of how difficult it is to deal with broad risk categories for referral. Both of these are seen as risks. Available data has consistently shown that mortality rates in Bangladesh and certain parts of Africa are two to seven times higher for women aged 10-19 years than for women aged 20-24 (Royston and Armstrong, 1989: 38). The data appears to reflect the two risk factors. The actual problem however, is whether, when very young women give birth, they may suffer obstructed labour as a result of premature pelves. Pregnancy for women under seventeen years of age is one of the risk factors in the *Sistema Informativo Perinatal/Bolivia*, published in the *Normas Nacionales.* If these norms are followed through, every young woman under 17 and in her first pregnancy should be considered at risk. What health care workers should be looking for is the specific instance of a contracted pelvis. If that condition is not present, the pregnancy may still be a difficult pregnancy but this may be related to social factors. For example, are women who are becoming pregnant under 17 years of age coping without family and social supports which might jeopardise their general health during pregnancy? If this is so, what is needed is work at the social levels to understand why support is withdrawn and to generate alternative support structures, not to turn young women into high risk medical cases. The categories of age and first pregnancy are too broad to have real meaning for referrals.

The *Normas Nacionales* lists thirteen risk factors in all, including pregnant women who are illiterate. This is another example of data from a different culture being incorrectly imported. The WHO has argued that when illiterate women overcome the cultural constraints which have led to their not receiving formal education, they are empowered to enter the labour force, to organise fertility control and in general to have more control over their status as mothers and wives (Royston and Armstrong, 1989: 56-62). These are observations deeply relevant to societies such as Bangladesh and other traditional Muslim societies. But illiteracy in the context of the Andes means lack of literacy *in Spanish*, in oral Andean cultures where highly complex schemes of knowledge are transmitted through indigenous languages, which are rejected by a powerful minority as being backward. Illiteracy as a risk factor then becomes not a proxy for vulnerable social status for women but a vehicle for the social and racial discrimination which is experienced by women from the countryside when they come face to face with the biomedical system.

Advocates of full antenatal screening argue that if you can diagnose potential or impending complications with risk predictors, it is possible to avoid maternal mortality by transferring high-risk women to hospitals or health centres. For antenatal care to work in Bolivia, motivation, resources and training would be required from all the potential actors, women and health care staff alike, first to resolve entrenched problems of language and racism and then to raise attendance levels to the point where antenatal care could take on screening for risks in any meaningful way.

Even then, there are great doubts about the efficacy of this approach. We have just seen that for screening to be effective, risk factors must be relevant, reliable and reliably identifiable. In addition to demographic data, specific medical factors have been identified which have been incorporated, often ritualistically, into antenatal care, such as blood pressure checks to screen for high risk women. Efforts to utilise risk factors have been either on the basis of scoring systems, where specific signs or symptoms are given a weighting and added up, or on the basis of previous medical history (Silverton, 1993: 253-4). With both versions, they can, at best, indicate that the individual has a higher risk of facing a certain outcome and with few exceptions, they are not predictive or diagnostic of outcome (ibid.). In relation to risk scoring systems, this is because the data on which the scores themselves are based are drawn from large populations of women and then applied to each pregnant woman, a technique which can have many more weaknesses than strengths (Wagner, 1994: 99). The outstanding problem remains that women identified as low risk will have problems and even serious complications and that many women identified as high risk will have none.[10] McDonagh (1996) argues that antenatal screening procedures are a 'service of flawed methodology', exported to developing countries as an essential strategy. Yet the protocols for antenatal care are not uniform, there is no agreement on what should constitute antenatal care and the screening tests which are used do not have proven effectiveness and will absorb valuable and extremely scarce financial resources in these countries.

Anthropometry is one exception which has been evaluated and found to be a reliable, simple and cheap method for diagnosing correctly low birthweight (Kevany, 1995).[11]

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10 This attempt to use data from large groups of women and apply it to the individual contrasts with the self-identification of problems and risks in pregnancy which emerged in our study. Women identified themselves as having problems with their wombs, propensity to 'dry' births, and possible difficulties if theirs was a first pregnancy or if they had already had six children or more (Personal communication, Dr Denise Arnold. See also ILCA 1995a, 1995b).

11 The evaluation was a meta-analysis of 25 studies in 20 different countries, where women were measured for their height, mid-arm circumference, pre-pregnancy and early pregnancy weight, and body mass index amongst other indicators. These were found to be strongly predictive of low birth weight and intrauterine growth retardation.

Their potential value in an antenatal scheme is that they require simple equipment, weighing scales, simple training and recording. However the associations for maternal outcomes such as postpartum haemorrhage and prolonged labour were not strong enough in the opinion of the research team to warrant their general use. Even if such tests were strongly predictive, however there remains the problem of non-engagement with state antenatal services and the dubious value of attendance if there is no intervention to follow on from a diagnostic test.

In conclusion, the commonsense argument that some women are at higher risk than others, that not all women share an equal risk has had many advocates and many interventions have been set up on this basis. Nonetheless, it seems clear that a set of formulae or schedules will pick up some women and not pick up others because of the way these factors are interwoven; factors of identification of data, of interpretation, of usage of health care services. In the Latin American context, Caldeyro-Barcia in a review paper, wrote that risk ratings based on multiple factors have proved to be an inappropriate technology, especially when transferred from the north Atlantic region to another region with vastly different social, economic and demographic factors (quoted in Wagner, 1994: 100). An assessment of a risk classification scheme used in Cuba to guide maternal health programmes from the mid-1970s, ultimately found that too many pregnant women were being put into a high-risk category, with protective measures being taken for them which were unnecessary and a waste of resources (Farnot, 1985: 830). All that can be concluded is that antenatal care can have some beneficial effect in some pregnancies but it is not possible to identify which ones in advance.

According to McDonagh (1996: 11) the collated evidence on antenatal screening suggests substantial grounds for questioning effectiveness in the settings of developed countries, with inadequate justification for recommending this service to be part of mother and child healthcare programmes in developing countries. It appears that the risk approach to maternity care is not workable, not least because so many of the complications of pregnancy are unpredictable and occur among women who have already been designated as low risk (*Carnegie Quarterly*, 1993)

10.4 Essential obstetric services

Rejecting the high-risk/low-risk model, the Centre for Population and Family Health (Columbia University) has argued that the risk of maternal death is always there, no matter how well fed the population. Therefore emphasis must be placed on

'identifying and overcoming barriers to treatment of serious obstetric complications' (Centre for Population and Family Health, 1993: 2).

In arguing against a high risk/low risk model to plan interventions, Maine and McCarthy analyse each of the elements in the chain of events they diagramatically present as pathways to maternal death (see Chapter 10 and Appendix III) to show why interventions based on risk models are liable to be less successful. Beginning with outcomes, they return to the obvious point that not getting pregnant helps women avoid maternal death, so contraception has a significant impact in reducing maternal mortality, but not by preventing high risk pregnancies. It is the complications of pregnancy that kill: haemorrhage, unsafe abortion, hypertension, obstructed labour, infection and other causes. And these complications, they argue, occur for women with low-risk as well as high risk designations. Complications in turn are affected by intermediate factors of health behaviour, health status and access to health support. Age and parity do affect women but cannot in themselves be used to warn women in advance of complications that might arise. Closely spaced births may affect women but there is no data on whether it increases women's mortality. Health status, governed by socio-economic status, can influence whether a woman will experience complications and whether she will survive those complications. Women who have complications during labour and do not receive help, for whatever reason, increase their chances of dying. Access to health services, information about them, transport to them, finance for them, quality care from them, all influence the chances of a woman with complications. Socio-economic status, the most 'distant' of the factors putting women on the pathway to mortality, comes to bear through these intermediate factors.

Efforts to deal with maternal deaths through programmes directed at any point along these pathways must take account of unexpected relationships. They give the example of intensive nutrition for already pregnant women which may simply lead to an increase in the numbers of women with obstructed labour, due to bigger babies (this has been documented in northern Nigeria, see Maine, 1991: 23). Better access to nutrition will help women over a longer timeframe but this will not cancel out the need for emergency obstetric facilities in the short term.

Similarly, they go through the maze of possible programme interventions, what outcomes can be expected, always pointing out that the bottom line is the necessity for essential obsteric services or what can also be called emergency obstetric care. This is not sophisticated technology —it is blood transfusion, antibiotics, and other

drugs, and Caesarean section.[12] Its provision and access to it, along with contraception to prevent pregnancy and safe abortion facilities will have direct and immediate impacts on maternal mortality. The estimate is that up to 15% of all births may require emergency obstetric facilities. These need not necessarily be hospital-based and are not high-technology. Indeed the model works from the premiss that simple procedures can be set up at the geographical periphery of state systems in existing networks of health centres and small rural hospitals *(Carnegie Quarterly,* 1993: 8). Using this model, nurse midwives have been trained to do emergency Caesarean sections in Zaire (ibid.: 3).[13] Basic emergency care procedures can all, in theory, be put in place if there is the political commitment on the part of policy planners and providers to develop training, resources, supplies, attention to transport, two-way radio systems for very remote communities, and to work with local communities to encourage their seeking help when complications arise. Maine includes a time scale alongside each of the major complications between its onset and death, to make the point that there is always some margin of time to be worked with to obtain help when life-threatening events have occurred (Maine, 1991: 42). From this perspective, the complexity of maternal mortality in the short term is the vast complexity of personal, political, social and economic factors which are going to leave a woman in a situation where she cannot access relatively simple aids to save her life.

The work from the Columbia-based group does not attempt to look at what practices and procedures within a non-western biomedical system may be useful in dealing with maternal complications. But it has the immense value of a) providing an overview of all the potential factors, and b) encouraging the medical profession and, by extension, health care planners, to concentrate on the immediate provision of what they already know will save lives —namely emergency care in existing health

12 The WHO list of essential obstetric functions includes the following: Caesarean sections, administration of anaesthesia, blood transfusions, vacuum extractions, manual removal of the placenta, suction curettage for incomplete abortions, insertion of intrauterine devices, contraceptive sterilisations. Obstetric first aid should at a minimum provide manual removal of the placenta, antibiotics, sedatives, intravenous drips of plasma expander, oxytocic drugs or even just fluids orally administered to prevent dehydration. In the context of remote rural communities in the Bolivian Andes, people are now reasonably familiar with the oral rehydration formula of sugar, salt and water to counteract the impact of cholera as well as regularly using *mates* such as camomile (*manzanilla*) for very sick people (Dra. Denise Arnold, personal communication) and this is easily transferable to a woman who has developed the complication of obstructed labour, for example, and who requires emergency aid and/or transport to a district or regional hospital.

13 How far down the scale of health care personnel the training in emergency obstetric procedures should extend is a contentious issue. It cuts across long-established professional boundaries in western-based medicine to have non-doctors performing such procedures. On the other hand, training for doctors is lengthy and very expensive. In China, it has been policy to train non-doctors at the level of primary health centre or village unit to carry out emergency Caesarean sections and other life-saving procedures with the minimum of equipment (Philpott, 1980: 123). There are two further dimensions to the training problem: any training has to be based on practice and not on theory — people should practice with coping with specific emergency obstetric complications. The second aspect is that the training doctors receive in well-equipped hospitals in up-to-date procedures is not at all applicable to settings where that equipment is non-existent (ibid.: 114-126).

facilities. Of the three delays leading to maternal death —a delay by women in seeking life-saving treatment; a delay in reaching an appropriate medical centre; and a delay in receiving adequate treatment (Thaddeus and Maine, 1990)—, they can deal with the latter two by ensuring that emergency medical services, backed up by excellent training and resources, are available at the very periphery of the state system, the local health posts and centres. This approach is in contrast with *Plan Vida* which draws on the low-risk/ high-risk argument and therefore places emphasis on developing antenatal care, a referral system to centralised facilities and an increase in hospital birth. *Plan Vida* points back to an initial split in thinking which occurred when the Safe Motherhood initiative was first launched and the pressure on developing countries to adopt a high-risk/low-risk strategy. As early as 1985, Maine argued that the logic of maternal mortality was such that the World Bank should see it as a resource issue and move to support the building of maternity centres in rural areas, with appropriate training, resources, and provision of drugs and supplies (Rosenfield and Maine, 1985: 85).

Broadly speaking, the WHO chose to adopt the high-risk/low-risk strategy, opting for antenatal care and an increase in referrals to larger centres to deal with potentially life-threatening symptoms (Royston and Armstrong, 1989: 159-164). This policy informed the development of the Safe Motherhood initiative for many countries, including Bolivia. There is no proof that of themselves, these strategies reduce maternal mortality even if they were feasible or practicable for very poor and culturally diverse countries.

It is extremely difficult to bring the logic of high-risk/low-risk thinking to bear on the realities of the Altiplano or the barrios of the urban perimeters of Bolivian cities, given all the immense social and political complexities. However, health care planners in Bolivia have already been asked to do this with *Plan Vida*. The tragedy is that they are being asked to straddle the many dimensions of this complex problem with an inaccurate and out of date model of the prediction of risk.

10.5 Conclusion

To be effective, Safe Motherhood programmes first need to have an accurate picture of maternal deaths and to evaluate accurately how declines in the mortality rate are brought about —what the factors are. Neither is easy. The lesson from the west is that claims about the drop in maternal mortality are made without proper evaluation. The premises on which the western model of hospital care has been based, an increase in hospital births coupled with antenatal care to screen women for high risk cases to reduce deaths, has not brought the benefits to Third World countries that were expected.

Many have questioned if this is not because the majority of factors which brought about reductions in the north Atlantic countries (the United States, Canada and western Europe), lay outside the scope of the medical model in the first place, such as improved nutrition and general health. A specific example of this would be the virtual disappearance, as chronic malnutrition has receded in these north Atlantic countries, of the once widespread problem of severely misshapen pelves. Those who argue against the medical model of birth are in favour of tackling the problems of under and malnutrition at a political and programme level, while using only appropriate technology in childbirth, specialist biomedical aid when necessary, and otherwise leaving birth in the hands of women and women midwives. Long-term, they argue this must be the most effective package for preventing mortality and morbidity. It also secures optimum conditions for birth which respect women as the central actors. It is a less dramatic approach and the benefits are long-term rather than immediate but ultimately, better health reduces the absolute numbers of obstetric complications.

The concept of high-risk/low-risk which is embedded in the medical model, itself has now been shown not to work where women, for very complex reasons, are not in a position to a) improve their general health status and b) to receive ongoing antenatal care throughout their pregnancies. Antenatal care itself has been open to question as an effective strategy. An alternative to this approach is to work with relocating essential obstetric care to the very edge of the biomedical network, to train and use health personnel other than doctors so that resources are in place in case of complications arising for women giving birth at home in their communities.[14] This alternative to high-risk/low-risk reckons that up to 15% of all births may need some form of simple medical and obstetric technology to resolve life-threatening complications. However, programmes which have sought to improve transport for women to access facilities with obstetric complications have met with little or no success in regions such as the rural Andean highlands where the state health infrastructure is very weak (Merchant, 1993: 45). This is more than a simple lack of geographical presence. There is a profound distrust of state provision with excellent reasons. Women die at home in the remote rural regions. They have also died in hospitals, not just because they have not got there in time, but because they did not have good, correct treatment and prompt treatment when they got there (Terán, 1990).[15]

14 Merchant (1993: 45) refers to this alternative as the 'alarm and transport approach'.

15 An example of the these multiple factors working against women comes from the Inquisivi Province of La Paz. The isolated population has poor roads and almost no transport. The nursing auxiliaries who staff the three local health posts do not have midwifery training and the postas themselves are said to be poorly equipped. The nearest district hospital is unable to carry out the necessary range of essential emergency obstetric functions and therefore women often need to be transferred to La Paz or Oruro, a journey which may take an additional 4 to 6 hours (Kwast et al., 1995: S71). Under such circumstances, minimal engagement with ineffective state services seems a sensible response. The problem remains however as to how this provision of emergency support can be made available.

Neither the high-risk/low-risk approach nor this alternative approach has attempted to work with what local resources and knowledges are there already in communities to support women in childbirth when complications arise. However, there may be elements from each of these approaches, which can be utilised at local level: the issues of nutrition, age and parity (too many children born to women who are too worn out with childbearing), an assessment of what biomedical emergency measures women have sought, why they have been unable to trust state health personnel and facilities —these may have resonances at community levels, may help politicise women around their health care needs (as indeed Howard-Grabman, 1993, has shown in her work). All these issues point to the need for a model of birth which is not based on what obstetric medicine abstracts as the realities of birth but on a socially responsive and responsible approach to women's needs, as women define them.