Safe Motherhood

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Safe childbirth needs more than medical services

This article reviews nonmedical factors contributing to maternal mortality in Indonesia, the Philippines, and Thailand. In general, countries or regions should define their own priorities for intervention strategies designed to diminish the influence of such factors.

Each year more than 200 million women become pregnant and approximately 130 million bear children. Some 500,000 of these women die from complications of pregnancy and childbirth, while many more suffer disability and pain for the rest of their lives. More than 99% of maternal deaths occur in the developing world, well over half of them in Asia.

The risk of maternal death in industrialized countries is estimated to be between 10 and 25 per 100,000 live births, whereas that in developing countries is between 2000 and 6500 per 100,000. Furthermore, because many women in the Third World do not have access to or will not use contraception, they have become victims of unregulated fertility and so are exposed to the risk of death much more frequently and for a greater portion of their lives than women in affluent societies. Childbirth in the poorer countries is now the leading cause of death in women of reproductive age. Among women aged 15–49 years in developing countries, 25% of all mortality is maternal; the corresponding figure in the USA is less than 1%.

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While these data serve to emphasize the poor quality of health care available to women in the Third World, they also demonstrate the preventable nature of the tragedy. For example, maternal mortality in some south-east Asian countries is high, as in Indonesia where it is 450 per 100,000,
while in Singapore it is only about 28 per 100,000. The situation in the Third World is very similar to what the developed world experienced a century ago.

Until comparatively recently there was little documentation of the problem and, since it mainly affected the rural poor, virtually no attention was given to it. By the mid-1970s more reliable estimates became available of very high maternal mortality rates in developing countries while the rates in the industrialized world were low. This was one of the factors leading to the international commitment to primary health care and the health-for-all strategy. International attention is now being focused on the persistently high levels of maternal mortality in many countries.

The MASEAN Chapter of Obstetrics and Gynaecology has studied factors influencing maternal mortality in the region of the Association of South-East Asian Nations. Besides the medical factors there are failures in health care delivery, inadequate transport, and other logistical elements, and social, cultural and political influences that profoundly affect women’s status, health, fertility and health-seeking behaviour. It is

| Medical causes of 61 maternal deaths in Indonesia, the Philippines and Thailand |
|---------------------------|-----------------|-----------------|-----------------|-----------------|
| Cause of death            | Indonesia | Philippines | Thailand | Total |
| Eclampsia/intracranial haemorrhage | 9         | 5               | 1            | 15            |
| Postpartum haemorrhage    | 7         | 2               | 3            | 12            |
| Sepsis                    | 5         | 5               | 0            | 10            |
| Hepatitis                 | 1         | 3               | 0            | 4             |
| Antepartum haemorrhage    | 2         | 1               | 0            | 3             |
| Amniotic fluid embolism   | 0         | 2               | 1            | 3             |
| Ruptured uterus           | 2         | 0               | 0            | 2             |
| Illegal abortion          | 1         | 0               | 1            | 2             |
| Cardiac disease           | 0         | 1               | 1            | 2             |
| Complications of uterine molar evacuation | 0         | 2               | 0            | 2             |
| Anaesthetic complications | 0         | 1               | 0            | 1             |
| Cerebral malaria          | 0         | 0               | 1            | 1             |
| Dengue haemorrhagic fever | 0         | 0               | 1            | 1             |
| Tetanus                   | 1         | 0               | 0            | 1             |
| Road traffic accident     | 0         | 0               | 1            | 1             |
| Ruptured ectopic pregnancy | 1       | 0               | 0            | 1             |

All maternal deaths occurring over a six-month period in one or more rural areas in each participating country were recorded on special forms. The object was to look at factors that possibly influenced maternal mortality: age, parity, health care facilities, prenatal care, availability of blood for transfusion, and so on.

The participating countries were Brunei, Indonesia, the Philippines, Singapore and Thailand. Singapore served as the centre for data analysis. Over the six-month period, three deaths were reported from Brunei, 29 from Indonesia, 22 from the Philippines, and 10 from Thailand. The data from Brunei were insufficient to justify their inclusion in the analysis. The medical causes of the remaining 61 deaths are indicated in the table.

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these factors that the study aimed to identify, with a view to indicating the principal areas of research needed as a basis for preventive approaches in community action. More importantly, the study aimed to outline particular priorities for each participating country.
The nonmedical factors contributing to maternal mortality in Indonesia, the Philippines, and Thailand are considered below.

Age

More than a third of the mothers who died were in age groups generally associated with increased mortality: under 20 and over 35 years. In Thailand, 50% of the mothers who died were under 20, while in Indonesia 24% were over 35 years of age.

Very young mothers are at particular risk, because they may not be fully developed. In southern Asia, as many as 54% of all marriages involve teenage girls. This is only likely to be changed through education over many years. Meanwhile, the avoidance of pregnancy in the high-risk age groups can be achieved by culturally acceptable family planning methods.

Area of residence

Most of the women who died were rural dwellers. In rural areas there are inevitably long delays before pregnant women who are ill receive attention; health care facilities may be sparse and inaccessible, and transport may be inadequate. In these circumstances it is desirable to provide maternity homes to which high-risk mothers can be referred before delivery; transport from these homes to regional centres could be organized relatively effectively and efficiently.

Education

Poorly educated women are often suspicious of health care and show little response to its availability. They also resist modern family planning methods and so suffer the consequences of unregulated fertility.

Of the Thai women who died in childbirth, 40% had received no education; in the Philippines the corresponding figure was 9% and the educational status of 40% of the women who died was unknown but probably low; in Indonesia the proportion of uneducated mothers who died was 17.2%. Clearly, therefore, it is vital to raise women’s educational status. Expenditure on health care is pointless if people do not use the services offered, for whatever reason.

Occupation

In Indonesia and the Philippines the vast majority of women work at home or in the fields. They often toil for long hours, carry heavy loads, and tend to the needs of their children and husbands. These women are commonly undernourished and frequently perform badly in pregnancy. They should be accorded due recognition for their efforts, consulted on matters of agricultural development, and given more consideration by macroeconomic planners. With proper education women are more likely to obtain paid employment and this becomes an incentive for them to limit the size of their families.
Parity

There is a strong correlation between parity and maternal mortality. Grand multiparae (women with six or more pregnancies with viable fetuses) are often anaemic and their pregnancies complicated by hypertension, diabetes and other conditions. They are also at increased risk of obstructed labour and uterine rupture due to malpresentation, and may respond badly to blood loss. Primiparae are also at increased risk of dying in childbirth.

The proportions of these high-risk pregnancies among the women who died were 59% in Indonesia, 68% in the Philippines, and 90% in Thailand (Fig. 1). Once again the remedy for this is to ensure that proper birth control methods are available.

Contraceptive history

Some two thirds of the women who died had not been using any form of contraception.

Place of delivery

The delivery of babies in hospital has been a major reason for the decrease in maternal mortality in developed countries. In the present study, the proportions of mothers who died during confinement in their own homes were 35%, 27% and 20% in Indonesia, the Philippines, and Thailand respectively. As far as possible, home delivery should be restricted to women at low risk and to locations from which patients can be moved to a health facility without delay.

Less than a third of the mothers who died lived near the place of delivery. In Indonesia it was reported that the place of residence of as many as 62% was far from the intended place of delivery. The corresponding figures for the Philippines and Thailand were 41% and 40%. In the Philippines, 14% lived very far from the place of delivery.

This situation, together with the fact that no transport was available for 13%, 9% and 40% of the mothers who died in Indonesia, the Philippines and Thailand respectively,
undoubtedly led to delays in medical intervention and to unfavourable outcomes. An efficient system of transportation should therefore be available; where public transport is inadequate the use of military or police vehicles should be considered.

**Antenatal care**

When properly conducted, antenatal care is very effective in reducing maternal mortality. Significantly, of the women who died in pregnancy or childbirth in Indonesia, the Philippines, and Thailand, 21%, 46% and 30% respectively had received no antenatal care, partly because many women did not understand the need for it. Antenatal care had been unavailable in only 3%, 23% and 10% of the cases in the respective countries.

In Indonesia, 50% of mothers who were questioned thought that such care was unnecessary; the corresponding figures in the Philippines and Thailand were 46% and 33%. Sometimes antenatal care was not used because the nearest clinic was too far away. There were also religious and cultural objections. These issues are best resolved in the long term by the education of girls at school. Advice on the need for antenatal care can also be disseminated by staff at health posts and by village health workers. This is likely to be of greatest importance in the Philippines, where 50% of the women who died had received no antenatal care either because it was not available or because they did not avail themselves of services on offer.

**Mode of delivery**

About a third of all maternal deaths involved instrumental or operative delivery. The associated skills undoubtedly need to be upgraded, but it should also be noted that many patients requiring surgery are moribund on arrival at hospital and are therefore poor operative risks. Consequently, it is vital that potential difficulty in labour be recognized at an early stage so that prompt referral can take place. Three instances of labour lasting more than 24 hours were reported; such delays must be avoided. One operative death in the Philippines was associated with respiratory arrest resulting from inadvertent high spinal anaesthesia. Sepsis following operative deliveries was common in Indonesia and the Philippines, demonstrating the need for strict asepsis, good surgical technique and appropriate antimicrobial therapy.

**Health care provision**

Since the provision of antenatal care is largely a matter for paramedical personnel, their training should be upgraded. In the Philippines and Thailand this should include improving the skills of traditional birth attendants involved in the care of pregnant women. In particular they should be trained to identify patients at risk who require early referral.

**Stage at which death occurred**

The majority of deaths took place in the postpartum period. In part this may have been a reflection of the moribund state of some mothers on arriving in hospital;
however, there is a clear need to prepare women for delivery and unexpected blood loss. Every effort should be made to ensure the prevention and treatment of anaemia; this may require antimalarial and anthelmintic chemoprophylaxis as well as the routine administration of haematinics during pregnancy.

In Indonesia, 10% of deaths occurred in labour, something that may be related to delivery by untrained traditional birth attendants. The need to upgrade the skills of these health workers cannot be over-emphasized. As can be seen in Fig. 2, 50% or more of the women who died were not delivered by medical staff. This failing was attributable either to a lack of financial resources or to the cultural belief that pregnancy is a normal occurrence not requiring medical assistance.

In some countries, doctors tend to practise only in urban areas. Political will is necessary to deal with this problem and pressure should be applied to ensure that trainee doctors spend some time working in remote rural areas.

**Blood loss**

Excessive plus uncontrollable blood losses accounted for the 62% of deaths in Indonesia, 55% in the Philippines, and 40% in Thailand. Yet oxytocic drugs were not administered in a substantial number of cases that might have benefited from them. This situation may be associated with delivery by nonmedical personnel, who should, therefore, be instructed on the usefulness of oxytocics in the third stage of labour and authorized to administer a single parenteral dose of ergometrine. The risk attaching to this approach is small in

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comparison with that of mortality caused by haemorrhage.

In Indonesia, 45% of the women who died and, in our judgement, might have benefited from a blood transfusion, did not receive one. A shortage of blood donors was a contributory factor, but transport difficulties, shortages of equipment and inadequate storage facilities were also significant in this connection.

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The medical causes of maternal mortality and their prevention and treatment are well documented. However, underlying the clinical issues are other factors that may be more important, including age, parity, stature, the availability and utilization of antenatal care, poor transport facilities, lack of equipment, shortage of blood for transfusion, and inadequately skilled help in labour. Each region or country should identify and list in order of priority its own specific deficiencies. It is necessary to look beyond the medical services and into women’s living standards and their social, cultural and economic environment.

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Introducing AIDS education in schools

It is important that AIDS education in schools be aimed particularly at students younger than the age group likely to have risk behaviour. If many students leave school before this age, it may be appropriate to target even younger students. All older students also need to be targeted.

The training of teachers is vital for the successful implementation of an AIDS education programme. The needs of the teachers should be assessed and appropriate training programmes developed. Well equipped and well trained teachers will have a significant impact on the knowledge, skills, and attitudes of the students in their care.