<table>
<thead>
<tr>
<th>Title</th>
<th>International children center: maternal mortality.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Author(s)</td>
<td>Houllemare, Lucien.</td>
</tr>
<tr>
<td>Date</td>
<td>1989</td>
</tr>
<tr>
<td>URL</td>
<td><a href="http://hdl.handle.net/10220/658">http://hdl.handle.net/10220/658</a></td>
</tr>
<tr>
<td>Rights</td>
<td></td>
</tr>
</tbody>
</table>
International Children Center: Maternal Mortality

By

Lucien Houlemare
INTERNATIONAL CHILDREN'S CENTRE

MATERNAL MORTALITY

Dr Lucien Houllemare ¹

Reduction of maternal mortality is among the primary objectives of ICC for the next four years.

The international organizations - WHO, UNFPA, the World Bank, the French Ministry of Cooperation, as well as many governmental and non-governmental organizations - are preparing to take action on this subject.

This is a recent development, and goes back only a few years. Why? How? We shall attempt to give the answers in three chapters:

1. Understanding of the problem in order to create awareness in the population and launch a national programme

2. Collection of specific data in order to work out the most appropriate strategies and follow up the programme's development

3. Establishment of well equipped reference centres possessing the resources needed to deal with obstetrical emergencies.

* * *

1. Understanding of the problem in order to create awareness in the population and launch a national programme

- Unlike infant mortality, the extent of maternal mortality is not really known and is underestimated by the population, the medical profession, and the authorities. Yet, although infant mortality in developing countries is on average ten times higher than in developed countries, maternal mortality is a hundred times higher, with its disastrous consequences on the family, the health of the other children, and the countries' development.

¹ Director of Technical Activities, ICC
Maternal mortality

- There are a great many reasons for this: women usually die discreetly, silently, alone, at home or in a labour hut, by the side of the road while being taken for care, far from any health unit.

  - The phenomenon is diffuse, hidden, and accepted with fatalism by society
  - The status of women in a manifestly inferior position is also part of the problem

- Definition of maternal mortality:
  WHO defines maternal death as "the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes".

- Some statistics which speak for themselves:

  500,000 deaths in the South, 6,000 in the North
  150,000 in Africa
  300,000 in Asia
  10 - 20 per 100,000 live births in the North
  versus 400 - 1500 per 100,000 in the South
  which brings the risk to 1 woman in 20 or 30 in Africa and 1 woman in 50 or 60 in Asia.

Revelation of the problem's importance, and dissemination of information resulting from it, are important political decisions to be taken:

  - both at government level and in the relevant administrative, medical and religious spheres
  - and through women's associations and the media.

Information must be disseminated from the centre towards the periphery, and will only be effective once women have realized that childbirth is possible without being a threat to their own lives.

This leads to a series of very varied approaches covering:

- the medical sectors, and the social sciences with particular reference to anthropology:
  - knowledge of the rituals of childbirth, dangerous practices (e.g. over-use of oxytocic plants)
Maternal mortality

- literacy programmes for women and school education for girls
- age of marriage
- the status of women, including polygamy which leads to competition among the various wives.

In these different fields much remains to be done, especially through studies and research. Thus a programme to control maternal mortality must be shown as a much larger-scale activity than an immunization or oral rehydration programme. It is similar in complexity to a programme to control infant mortality.

* * *

2. Collection of specific data in order to work out the most appropriate strategies and follow up the programme's development

The statistics given are frequently no more than global approximations for a country or a region.

For reasons of simplification, maternal mortality is measured on the basis of live births and not in relation to the number of pregnancies, and is therefore always calculated by default.

a) Demographic studies

These provide an overall idea of maternal mortality
- statistics collected through registration of births and deaths usually underestimate the rates, and represent about 70% of the true figures for maternal mortality
- in hospital records, on the other hand, the statistics lead to overestimation since high-risk pregnancies are sent to hospital
- an indirect evaluation can be made by studying sex differential mortality between 15 and 49 years of age, or the proportion of sisters whose death was due to maternal mortality.

b) Epidemiological studies

1. Case-control surveys are a particularly effective way of bringing out factors associated with maternal mortality, and they enable groups at risk to be determined and then classified in two categories:
- normal pregnancies which can be followed up by community health workers (given refresher training if possible), and for which delivery can take place in the village

- risk pregnancies defined by simple criteria which can be determined by anybody, such as:
  - age: less than 18 or more than 35 years
  - parity: more than five pregnancies
  - pregnancies close together: less than two years between two births
  - height: 150 cm or less
  - abnormal phenomena: haemorrhage during pregnancy, etc.
  - anaemia, poor nutritional status
  - malaria, etc.

Such pregnancies require a different kind of care with more technical content.

2. Calculation of attributable risk makes it possible to determine to what extent any particular cause has an effect on maternal mortality, e.g.:

- Nutritional anaemias are responsible for 15% of maternal deaths: 50% of the women have less than 8 g of haemoglobin on delivery. A nutrition programme with supplementary feeding—a diet rich in iron and folates—should thus ideally be capable of preventing 15% of the deaths.

- Family planning: 50% of maternal deaths are believed to occur in connection with unwanted pregnancies (abortion; too early, too late or too many pregnancies)

Dissemination of contraception would reduce maternal mortality in the same proportion.

c) A study of the main causes in hospital units (haemorrhage, infections, dystocia, disorders of pregnancy, etc.) enables them to be broken down into a number of categories:

- those whose frequency can be decreased by prevention, e.g.:
  . eclampsia—by supervision of weight and blood pressure, and by tests for albumin in the urine
Maternal mortality

- abnormal presentations, such as breech or transverse presentation - by ensuring that the patient is sent at an early stage to a centre with appropriate facilities
  - those which can be detected during labour on the basis of:
    - excessive duration (e.g. more than 12 hours)
    - presumption of infections: fever, severe pain, etc., duration of membranes rupture
  - those which cannot be detected, such as postpartum haemorrhagia which raises the problem of deciding who should carry out examination of the uterus.

Knowledge of these concepts is basic to determining the categories of staff to be trained and at what levels.

d) The approach described by Dr Fathalla based on the case study on the death of Mrs I can be considered as an analytical model:

"Mrs I died in hospital during labour. The attending physician certified that the death was from haemorrhage due to placenta praevia. The consulting obstetrician said that the haemorrhage might not have been fatal if Mrs I had not been anaemic owing to parasitic infection and malnutrition. There was also concern because Mrs I had only received 500 ml of whole blood, and because she died on the operating table while a caesarean section was being performed by a physician undergoing specialist training. The hospital administrator noted that Mrs I had not arrived at the hospital until four hours after the onset of severe bleeding, and that she had had several episodes of bleeding during the last month for which she did not seek medical attention. The sociologist observed that Mrs I was 39 years old, with seven previous pregnancies and five living children. She had never used contraceptives and the last pregnancy was unwanted. In addition, she was poor, illiterate and lived in a rural area.

"Why did Mrs I die, and how could her death have been prevented? Dr Fathalla pointed out that there were a number of points at which Mrs I could have been helped off the road to death."

e) Induced abortion is in a class of its own. There are very few data on the subject:

- Very young girls are in the greatest danger, especially as abortion may be imposed for cultural reasons
- In any case, it is generally carried out in rudimentary, distressing and septic conditions, and is rarely admitted to.
The concept of voluntary termination of pregnancy exists almost exclusively in Western countries.

As a conclusion to this chapter on the data to be collected, knowledge of them makes it possible, at central level, to determine the main steps required to build up a programme and progressively strengthen the action that needs to be taken.

* * *

3. Establishment of well equipped reference centres possessing the resources needed to deal with obstetrical emergencies

Analysis shows that such reference centres (district hospital, regional hospital, etc.) must be in a position to carry out a series of specific therapeutic procedures:

- general anaesthesia
- forceps
- caesarian section
- transfusion
- examination of the uterus
- antibiotics therapy and treatment of eclampsia

This means that the following must be available:

- an operating theatre with all the necessary facilities - sterilization, anaesthesia, instruments, various equipment and supplies, a laboratory, etc. - including management, maintenance, stores, supplies, drugs, and there should be no dearth of all these items
- fluids: water, electricity, refrigeration
- a competent and adequately staffed surgical team, capable of carrying out diagnosis using if necessary a minimum amount of reliable equipment
- an estimate of the cost in terms of investment, operational costs and recurring expenses.

The definition of such a centre should be given special attention in the future to enable general agreement to be reached.
Studies on this subject have already been made, but have not been dealt with during this seminar. Set against the actual situation in each country, they could result in a basic project, worked out in detail with cost estimates and very specific constant characteristics.

- Once agreement is reached on what a reference centre entails, data must be clearly defined with regard to:
  - their number
  - where they should be set up
  - means of communication (warning system, quality, duration and comfort of transport, etc., and cost to the individual users)

All these considerations define the actual accessibility of the reference centre in all seasons, and the coverage rate for the country.

- Finally, long-term operational activities must be backed up by surveillance of the quality of care, evaluation of the services provided, and supervision without which the performance of such centres is likely to deteriorate within a few years. This is particularly detrimental if the population has begun to perceive their value.

To end this chapter on reference centres, it has been pointed out that this transfer of technology is quite within the reach of developing countries: responsibility will lie with the government to provide the training and facilities required.

* * *

We have thus obtained a brief general overview of the problems of maternal mortality.

In addition to the points covered in these three chapters, it is important to stress the further comments made by all colleagues in the medical profession in developing countries:

- the paucity of resources available
- the complete lack of maintenance of equipment
- the difficulty of obtaining drugs regularly
- the inadequacy of facilities for staff training
- the important influence of cultural traditions.
<table>
<thead>
<tr>
<th>REGION</th>
<th>FIGURE (Thousands)</th>
<th>RATE FOR 100,000 BIRTHS</th>
</tr>
</thead>
<tbody>
<tr>
<td>NORTHERN AMERICA</td>
<td>308</td>
<td>420</td>
</tr>
<tr>
<td>NORTH</td>
<td>14</td>
<td>340</td>
</tr>
<tr>
<td>SOUTHERN</td>
<td>230</td>
<td>650</td>
</tr>
<tr>
<td>SOUTHERN-EAST</td>
<td>52</td>
<td>420</td>
</tr>
<tr>
<td>EAST</td>
<td>12</td>
<td>55</td>
</tr>
<tr>
<td>IN AMERICA</td>
<td>34</td>
<td>270</td>
</tr>
<tr>
<td>ELOPING COUNTRIES</td>
<td>494</td>
<td>450</td>
</tr>
<tr>
<td>ELOPED COUNTRIES</td>
<td>6</td>
<td>30</td>
</tr>
</tbody>
</table>

WHO 1985
MATERNAL MORTALITY

SOME FIGURES

- 500,000 DEATHS IN SOUTHERN COUNTRIES,
- 6,000 IN NORTHERN COUNTRIES
- 150,000 IN AFRICA
- 10 - 20 PER 100,000 LIVE BIRTHS IN NORTHERN COUNTRIES
  VERSUS 400 - 1,500 PER 100,000 IN SOUTHERN COUNTRIES
- RAISING THE RISK IN ONE WOMAN UP TO 20-30 IN AFRICA
MATERNAL MORTALITY

ORGANIZE REFERENCE CENTRES

- WITH NECESSARY EQUIPMENT

- ABLE TO CARE FOR OBSTETRICAL EMERGENCIES
MATERNAL MORTALITY

TO BECOME AWARE OF THE PROBLEM:

- TO SENSITIZE THE POPULATION

- TO ANNOUNCE A NATIONAL PROGRAMME
MATERNAL MORTALITY

TO COLLECT ACCURATE DATA:

. TO DETERMINE MOST APPROPRIATE STRATEGIES

. TO FOLLOW UP THE PROGRAMME RESULTS
MATERNAL MORTALITY

1. TO BECOME AWARE OF THE PROBLEM

2. TO COLLECT ACCURATE DATA

3. TO ORGANIZE REFERENCES CENTRES
MATERNAL MORTALITY

COUNTRIES PRESENT AT NIAMEY (NIGER)

. POPULATION: 130 - 140 MILLIONS

. BIRTHS: 5.5 - 6 MILLIONS

. INFANTILE MORTALITY: 700,000

. MATERNAL MORTALITY: 20,000 - 40,000
## Assessment of Maternal Mortality Risk

Causes Related to Pregnancy by Region 1975-1984

<table>
<thead>
<tr>
<th>Region</th>
<th>Maternal Mortality Risk During Life</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa</td>
<td>1 : 21</td>
</tr>
<tr>
<td>Asia</td>
<td>1 : 54</td>
</tr>
<tr>
<td>South America</td>
<td>1 : 73</td>
</tr>
<tr>
<td>Caribbean</td>
<td>1 : 140</td>
</tr>
<tr>
<td>North America</td>
<td>1 : 6,366</td>
</tr>
<tr>
<td>Northern Europe</td>
<td>1 : 9,850</td>
</tr>
</tbody>
</table>

World Bank 1985
**MATERNAL MORTALITY**

**PER 130-140 000 000 INHABITANTS**

<table>
<thead>
<tr>
<th></th>
<th>SUB-SAHARIAN AFRICA</th>
<th>EUROPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>RTHS</td>
<td>5.5 - 6 M</td>
<td>2 M</td>
</tr>
<tr>
<td>FANTILE MORTALITY</td>
<td>700,000</td>
<td>30,000</td>
</tr>
<tr>
<td>FETAL MORTALITY</td>
<td>20,000 - 40,000</td>
<td></td>
</tr>
</tbody>
</table>
MATERNAL MORTALITY

DEFINITION: "THE DEATH OF A WOMAN WHILE PREGNANT OR WITHIN 42 DAYS OF TERMINATION OF PREGNANCY, IRRESPECTIVE OF THE DURATION AND SITE OF PREGNANCY, FROM ANY CAUSE RELATED TO OR AGGRAVATED BY THE PREGNANCY OR ITS MANAGEMENT BUT NOT FROM ACCIDENTAL OR INCIDENTAL CAUSES"

WHO