

Saving Mothers: Report on the Confidential Enquiries into Maternal Deaths in South Africa

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Introduction

In 1952 the Maternal Mortality Ratio (MMR), excluding early pregnancy deaths, was 54/100 000 births for England and Wales. This was the first year of the Confidential Enquiry into Maternal Deaths in England and Wales. In the triennium, 1994-1996 the MMR for the United Kingdom was 12.2/100 000 maternities. It is estimated that the MMR for South Africa is about 150/100 000 live births. Clearly the approximately twelve times higher MMR in South Africa is not due to a global lack of knowledge on how to manage severely ill pregnant women, but due to maternity services in South Africa not implementing available knowledge. There may be many

reasons for this, medical education, availability of resources and socio-economic problems immediately spring to mind. The establishment of the Confidential Enquiry into Maternal Deaths in South Africa allows us to determine at what level there is a breakdown in the health system and in turn this will allow for remedial action. Information for "Saving Mothers" comes from an analysis of data on women who died in South Africa during pregnancy, labour or the puerperium during 1998 and were reported to the National Committee on Confidential Enquiries into Maternal Deaths (NCCEMD).

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Discussion

Major Causes of Death

The "big five" causes of maternal death were complications of hypertensive conditions in pregnancy (23.2%), AIDS (14.5%), obstetric haemorrhage (13.3%), pregnancy-related sepsis (11.9), and pre-existing medical conditions, mainly pre-existing cardiac disease (10.4%). The "big five" accounted for 73.3% of all the deaths.

Obstetric haemorrhage includes antepartum and postpartum haemorrhage.

Pregnancy-related sepsis includes cases of septic abortion and puerperal sepsis. Early pregnancy deaths due to complications of miscarriage (abortions) and ectopic pregnancies accounted for 7.5% of deaths.

The deaths resulting from AIDS were probably significantly under-reported. The HIV status was unknown in 75.8% of maternal deaths. There were 32 cases of tuberculosis, pneumonia and meningitis and in 25 the HIV status was unknown.

It is possible that some of them could have been reclassified to AIDS if the HIV status had been known.

Other significant causes of death were acute collapse and embolism (7.3%) and anaesthetic complications (4.8%). No cause of death could be allocated to 3.2% of cases and there were 20 fortuitous deaths.

Direct causes of maternal death were responsible for 63.3% of deaths and

indirect causes responsible for 33.6%. When considering *direct causes* of maternal death alone, hypertensive conditions were responsible for more than 1 in 3 cases, haemorrhage more than 1 in 5, and pregnancy related sepsis (including septic abortions) just under 1 in 5 cases. In 138 maternal deaths, hypertension was present, (24.4% of all deaths), haemorrhage was involved in 93 cases (16.5% of all deaths) and sepsis was involved in 67 (11.9% of all deaths). Obstructed labour contributed directly to 20 (3.5%) of deaths, either by being a predisposing factor for haemorrhage or puerperal sepsis. Almost of a third of women (32.4%) who died had an anaesthetic at some point in the process.

Demographic features

The older woman especially the woman 30 years and older was demonstrated to be at significantly higher risk than the women under 30 years of age. Women in their first pregnancy or who had 5 or more pregnancies were also at greater risk of maternal death. Most deaths occurred in African women (92.6%). The remainder 4.4%, 0.9% and 0.7% occurred in Coloured, Whites and Indian races. The average gestational age at delivery or time of death of the women was 32.6 weeks (± 7.1 weeks). Death occurred before 24 completed weeks in 8.5% of cases, in 19.5% in the antenatal period, in 8.7% in labour and in 61.5% in the postpartum period.

Levels of care

The majority of maternal deaths occurred in the Level 2 hospitals (35.0%), Level 3 having the second highest number (29.6%), followed by Level 1 hospitals (27.3%), home deaths (2.8%), community health centres (2.3%), private hospitals (1.8%) and unknown (2.7%).

Considerable differences in pattern of disease occurred at the various levels. Obstetric haemorrhage was the commonest cause of death in the Level 1 hospitals whereas non-pregnancy related infections was most common in Level 2 hospitals and complications of hypertension in Level 3. Sixty percent of all anaesthetic related deaths occurred at Level 1 hospitals.

Avoidable factors, missed opportunities and substandard care

In almost half of the maternal deaths there was a missed opportunity for preventing death related to the behaviour of the woman herself or within her community. The most common factors were not attending antenatal care and delay in seeking help. It is not known what the specific reasons for non-attendance at antenatal clinics or the reason for delay in seeking help were. More attention will need to be placed on establishing these reasons so interventions can be introduced. Self-induced termination of pregnancy occurred in 30% of women dying from complications of abortion.

Problems with the administration were evenly distributed throughout the levels of care. Delay in transporting patients between institutions was seen in 13.6% of cases requiring transport. The problem varied considerably between Provinces with the lowest being 5% in Gauteng Province and the Western Cape to the highest of 38% in Mpumalanga Province, followed by the Eastern Cape at 33%. The problem of transport is probably even greater than this because the delays in transporting women from their homes to health institutions could not be estimated due to lack of information.

A lack of intensive care facilities, beds, equipment and personnel was found to be a factor in 15.6% of cases where mothers died in tertiary institutions.

This is also probably an underestimate of the magnitude of the problem because it is not known in how many cases doctors from Level 1 and 2 hospitals wanted to refer patients but were informed that there was no ICU bed available and to try other hospitals. A lack of availability of blood transfusion facilities was found in 11.7% of cases that required urgent blood transfusions.

Lack of personnel was rarely mentioned as an avoidable factor. This may be due to an adequate supply of staff; health workers at the institution not thinking of inadequate staffing because they have become so used to the shortages that they regard it as normal; or lack of information available to the assessors for them to allocate it as an avoidable factor.

While assessing the cases the assessors were requested to also look at the standard of routine care. They were asked to assess the care of the women before, and apart from the event, that ultimately led to her demise occurred. Obviously there was more information on women during their antenatal period than intrapartum and postpartum. This may be a biased sample and the care may not reflect that which occurred in women who did not die. However, the major problems that were identified were poor problem identification (12.4%), delayed or lack of referral of patients (16.%) and not following standard protocols (16.2%) all at the primary level of care. Similar problems occurred at primary and secondary levels of care during the intrapartum period. During the postpartum period, two problems stood out, namely infrequent, incomplete or prolonged abnormal observations without action (15%) and inappropriate discharge from hospital (14%). This may indicate a general feeling that once the baby has been delivered no problems will be experienced.

Management of the emergency event revealed problems in the care in more than half the cases. This was especially

the case at the primary level with there being problems in almost three quarters of cases managed for some part of their care at a level 1 care. More than half the cases managed at the level 2 care for some part of their care also had problems. Assessing the patient was done poorly in level 1 (53 cases) and level 2 (60 cases) and better at level 3 care (13 cases). Similar data emerged for making a diagnosis or a problem list (52, 64 and 15 cases respectively).

The wrong diagnosis was made in 22 cases at level 1, 38 cases at level 2 and 8 cases at level 3. The standard protocol was not followed in 84 cases at level 1, 50 cases at level 2 and 20 cases at level 3. Unfortunately, a reliable denominator could not be established for the levels of care because of the referrals between levels and patients entering level 2 or 3 without passing through level 1 or 2.

Problems in the initial assessment of the case i.e. taking a history and examining a case and in problem identification i.e. making a diagnosis or making a list of problems was especially poor at the secondary level of care. The major problems in the management related to not following the standard protocols for the management of the conditions (39% of cases) and wrong diagnosis (13% of cases). It is not known whether this is due to ignorance or "laziness" on the part of the staff. There was a delay in referring patients or they were managed at an inappropriate level of care in 18.4% of cases. This may represent problems in transport, problems in appreciating the severity of the condition or not having an identified referral hospital that will accept the patient. In more than a quarter of cases, observations after the emergency event were done infrequently or incompletely, or there were prolonged abnormal observations without any action (25.3% of cases). It is not known what the reason for this is. It could be due to the lack of staff, or due to laziness on the part of the staff. Almost a third of cases had an

anaesthetic at some point in the course of their management, and in 25.3% of cases having an anaesthetic, it was assessed that there was some form of substandard care.

Unprofessional conduct occurred on a few occasions. The most common problems were not attending patients when called or daily (26 cases) and not performing observations when prescribed (24 cases).

“Many Maternal Deaths are preventable.”

Although there are weaknesses in the reporting and the number of deaths may be an underestimate, the number of maternal deaths are large enough to show trends and for the chapter-writers to evaluate avoidable factors, missed opportunities and substandard care. Thus the recommendations suggested are based on clinical data assessed by maternity services experts.

Summary of Key Recommendations

1. Guidelines on managing conditions, which commonly result in maternal death, must be developed, distributed and implemented throughout the country by 2002.
2. Referral routes and criteria for referral must be established and implemented by 2001.
3. Establishing staffing and equipment norms per level of care must be performed in every health institution concerned with the care of pregnant women by 2001.
4. The distribution of the Termination of Pregnancy (TOP) services (especially

with respect to second trimester TOPs) must be expanded and the sites must be advertised to the public.

5. The partogram must be used for monitoring labour in every pregnant woman and problems detected on the partogram must be managed accordingly.
6. Blood must be available at every institution where caesarean sections are performed.
 7. Medical Obstetric Clinics must be established to ensure the optimal management of women with pre-existing medical conditions, especially women with heart disease and diabetes mellitus.
 8. Regional anaesthesia should be promoted in all sites performing caesarean sections.
 9. Family Planning services must intensively educate women 30 years and older or with 5 or more children about the dangers of pregnancy. Contraceptive use should be actively promoted in this group of women.
10. A National HIV/AIDS policy geared towards managing these women and dealing with the ethical considerations must be available by 2001.

The challenge for the next few years is to implement these recommendations. The recommendations have taken into account the present unique circumstances that face the health services of our country. The NCCEMD, however, believes the recommendations are practical and will help all health professionals to improve maternity services and reduce maternal deaths for the women they serve.

Further, we obviously can improve the workings of the NCCEMD in the coming years, by notifying all deaths. It must be stressed that all maternal deaths are notifiable by law. Although we have had deaths reported from private institutions and "at home", the NCCEMD believes these are an underestimate. Practical mechanisms to improve this reporting are being implemented.