

# Maternal Mortality at Kamuzu Central Hospital for 1985:

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## Introduction

The World Health Organisation defines maternal death as one that occurs during or within six weeks of the end of pregnancy. The maternal death rate is the number of maternal deaths per 100,000 live births. This number includes direct, indirect and non-maternal deaths occurring within the defined period. The three broad categories of maternal deaths are defined as follows:-

- i) *Direct maternal deaths* are deaths resulting from obstetric complication of the pregnant state, labour or puerperium or from intervention, omission of necessary treatment, incorrect treatment, or combinations of these causes.
- ii) *Indirect maternal deaths* are obstetric deaths resulting from previously existing disease or disease that developed during pregnancy, labour or puerperium. The disease is not directly due to obstetric causes but is aggravated by the physiological effects of pregnancy.
- iii) *Non-maternal deaths* are obstetric deaths resulting from accidental or incidental causes not related to pregnancy or its management.

The only fair way to compute maternal mortality statistics is on the basis of all deliveries. This report will include deaths as a consequence of abortion as well as those due to choriocarcinoma since all of these have pregnancy as their origin and they fit into the *broad* general category of maternal deaths. Since international standards call for the number of deaths to be expressed per 100,000 *live* births, this will be done in this report but bear in mind that the largest number of women who died in our care had, in fact, delivered stillbirths.

## Materials and methods:

This is a retrospective review of all recorded maternal deaths in the Department of Obstetrics and Gynaecology, at Kamuzu Central Hospital, Lilongwe, during 1985. The hospital functions not only as the district hospital for Lilongwe but also as a referral centre for the Northern and Central Regions of Malawi.

There were 8,147 births in the department; 7,619 delivered in the Old Wind Maternity, resulting in 7,555 live births. A further 528 delivered

in the paying obstetric unit and resulted in 520 live births. In addition there were slightly more than 2,700 admissions to the Gynaecology ward, nearly half of which were abortion – related. Of the 8,147 deliveries, 790 (9.7%) were Caesarian deliveries. Fifty-five patients were operated for ruptured uteri.

## Results and discussion:

A general overview of pregnancy related deaths in the Gynaecology and Obstetric units will be given first followed by as detailed analysis of the cases as is possible.

There were 70 recorded deaths related to pregnancy during 1985. The files of 10 patients are missing so that it is not possible to give any further information other than the general cause of death.

Of 2,700 admissions to the Gynaecology ward, 974 women/girls required evacuation for retained products of conception. Eight (8) of these went to die in the hospital either of overwhelming sepsis or anaemia. A smaller group of five women died of choriocarcinoma, a malignant gestational trophoblastic tumour which is almost always preceded by some kind of pregnancy. Their deaths however did not occur within the six weeks following delivery of the pregnancy in question nor even in the broader 90 days period.

Details of 52 cases are summarised in Tables I-VII. These exclude five women, of whom one is a non-maternal death and the other four are indirect maternal deaths. The non-maternal death was that of a woman referred from another district Hospital after being hit by a falling tree which caused quadriplegia due to a fracture of the cervical spine. She happened to be pregnant and at term. A Caesarean section was done resulting in a live birth but the patient died the following day.

There were four indirect maternal deaths; three of them due to meningitis (2 of the women being in the puerperium and one undelivered). The fourth death was that of a Para V woman who had had two cardiac valves replaced in South Africa but was not provided with either sterilisation or contraception post-operatively. She became pregnant within 6 months from the time of her surgery and went into intractable cardiac failure during early labour. She died about 6 hours following delivery, probably due to malfunction of one of her replaced valves. Her delivery which was by vacuum extraction resulted in a neonatal death. Another tragedy of her death was that she had spent 3½ months prior to delivery in the hospital.

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The remaining 52 women who died as a result of an obstetric complication of the pregnant state..... (WHO definition) give a maternal death rate of 712 deaths per 100,000 live births for 1985. This is a very high mortality figure, if indeed, pregnancy is to be considered a "normal physiological event" and not a pathological event. It is true that most women who become pregnant are in relatively good health; these figures however support the conclusion that quite a number of women are in fact ill when pregnancy commences. These 52 women do not represent the total number of women who died as direct maternal deaths, since there are some unreported deaths from the Old Wing Maternity that cannot be traced anywhere; they are not recorded. There are also deaths of pregnant women or puerperal women who died on the Gynaecology ward and whose deaths are not recorded anywhere, as well as patients transferred to the female medical and surgical wards who died there with complications of surgical or medical nature following delivery. These are some limitations which one must bear in mind while examining the data presented.

**Table III. Parity of patients:-**

| Gravida | No. |
|---------|-----|
| 1       | 9   |
| 2       | 5   |
| 3       | 3   |
| 4       | 10  |
| 5       | 3   |
| 6       | 3   |
| 7       | 5   |
| 8       | 2   |
| 9       | 1   |
| 10      | 2   |
| 11      | 1   |
| 15      | 1   |
| Unknown | 7   |

No significant conclusions can be made from these figures in the absence of total deliveries at each parity for comparison. However it can be said that the primigravida patient is in the high risk group as are those of Grav 5 or higher.

**Table I. Causes of maternal deaths:-**

| CAUSE                                | No. of Deaths |
|--------------------------------------|---------------|
| <b>Operative Intervention:</b>       |               |
| Ruptured Uterus                      | 14            |
| Caesarean delivery*                  | 10            |
| Advanced Extrauterine pregnancy      | 3             |
| <b>Other Major Causes:</b>           |               |
| Anaemia                              | 23            |
| Sepsis                               | 16            |
| Eclampsia/Preeclampsia               | 5             |
| renal Failure (not related to above) | 5             |
| Hepatic failure                      | 2             |
| Unknown (?Pulmonary embolus)         | 1             |

\*Not as direct cause but contributing to subsequent death.

**Table II. Antenatal attendance:-**

|                     |    |
|---------------------|----|
| Attendance recorded | 29 |
| No attendance       | 3  |
| Attendance unknown  | 20 |

No conclusions can be made about the importance of ANC attendance since slightly more than half of the direct maternal deaths are of women who attended ANC. However in a few cases of those known to have attended important risk factors were overlooked and the patient was not referred early when a risk factor was identified or the risk factor was not at all identified by the staff at the ANC.

**Table IV. Time in hospital before death:-**

|                           |    |
|---------------------------|----|
| Less than 1 hour          | 5  |
| 1- 4 hours                | 13 |
| 5- 24 hours               | 7  |
| 25- 72 hours              | 4  |
| 4 days 7 days             | 7  |
| 8 days 14 days            | 8  |
| 15- 20 days               | 5  |
| Unknown (died in theatre) | 3  |

The women who were hospitalised less than one hour died within minutes of admission before any attempt at resuscitation could be made. They had delayed too long at home or in transit; there was little or nothing to be done in their case. Those dying within four hours of admission were also not properly resuscitated, either being taken to theatre too quickly before proper resuscitation or there was no blood available for transfusion before definitive therapy was undertaken. For women dying after more than 24 hrs hospitalisation the main problem was sepsis and/or anaemia; they were simply inadequately treated with either appropriate antibiotics or adequate blood transfusion. Some of the women required further operative intervention which was delayed while waiting for blood or defervescence and went to deteriorate and die.

**Table V. Origin of the patients:-**

| District   | No. |
|------------|-----|
| Lilongwe   | 30  |
| Dowa       | 6   |
| Ntchisi    | 3   |
| Dedza      | 5*  |
| Ntcheu     | 1   |
| Nkhotakota | 1   |
| Salima     | 5   |
| Unknown    | 5   |

\*2 Patients from Mozambique.

As expected the majority of the patients were from Lilongwe District since KCH serves as the city hospital as well as the district hospital for this area. Also since obstetric problems, of their very nature, require prompt resolution for the most part, there are few who are referred from long distances, and usually only for such complications as cannot be managed at the District Hospital.

**Table VI. Outcome of pregnancy leading to death:-**

| Outcome         | No. |
|-----------------|-----|
| Stillbirths     | 29  |
| Neonatal deaths | 2   |
| Alive           | 14  |
| Undelivered     | 7   |

**Table VII. Avoidable factors:-**

| Factor                         | No. |
|--------------------------------|-----|
| Patient delay                  | 29  |
| <b>K.C.H. Responsible:</b>     |     |
| Medical Personnel responsible  | 14  |
| No blood                       | 10  |
| Anaesthetic death              | 3   |
| No transport                   | 2   |
| Unavailable appropriate drug   | 2   |
| <b>Other:</b>                  |     |
| Peripheral unit delay          | 7   |
| Sent without donors            | 10  |
| District Med. Officer absent   | 2   |
| District Lab. Assistant absent | 1   |

The avoidable factors are the most important part of the entire analysis since these factors once pointed out can be remedied in the future. Transport for instance has been a very important factor here in the past, but with close discipline in the use of transport and the residence of night call staff within the hospital this problem has for the most part been remedied. A big problem remains

with regard to medical staff who are at times required to be both at the Central Hospital and the Old Wind Maternity, situated 3 km away. Consequently there have been problems which have resulted in maternal death due to this factor alone. With a back-up team now available, it is hoped that this will not be a factor contributing to maternal death in the future.

Non-availability of adequate amounts of blood for transfusion continues to plague the proper management of maternity patients. Although a great improvement has occurred during the last five years with the introduction of regular blood donor sessions, the departmental demand continues to outstrip the supply. Peripheral units must take the blame for part of this situation since there is often no attempt or only a very limited attempt made to send appropriate donors when a moribund patient is referred here for further management. With the continued output of qualified and experienced Clinical Officers and their supply to the Districts there should in the future be no need to refer patients here for Caesarean delivery alone because the "Medical Officer is absent".

Often the cause of death is presumptive because no autopsies are done on the patient. Although it is possible to draw some conclusions from the clinical course of the patient and the laboratory results many questions still remain unanswered when a maternal death occurs.

It is also difficult to properly ascribe a cause of death when it is oneself or other member of staff at fault. For the most part staff manage the patient in a very skillful way with what is at hand and there is continual improvement in the level of patient care. There are however shortcomings and absences when there should not be. Even more difficult is trying to ascertain how many of these deaths could have been avoided, whilst at the same time being objective. A review committee to look at each of these in detail to see in what ways each of these deaths could have been prevented and that there was no fault of system to be blamed, would be very useful. To maintain objectivity this would have to be done by person outside the department; present manpower does not allow for this. There are weekly departmental meetings organised to review deaths occurring in the department during the week. These meetings are far from satisfactory due to lack of full participation by all staff concerned and reluctance by staff to speak out against another member of staff even when there has been flagrant omissions or mismanagement leading to the patient's demise.

Another limitation in retrospective analysis of hospital data at KCH is the inability to trace patient's records and the scanty data which such records often contain. It has been our experience that unless a patient's case file is stored in a safe

place at the time of her death, it is virtually impossible to trace the file two or three days later. The need for adequate storage space and clerical staff in the records departments cannot be overemphasized. In addition each person involved in the patient's care must be responsible for meticulous recording of events that take place during the patient's hospital stay as these occur; he should not depend on memory to summarise events that took place hours or, indeed, days ago.

A consequent example of such dependence on memory is the astonishing but true fact that in both the paying and non-paying maternity and gynaecology wards there are many deaths which are not recorded anywhere, although each ward has a "Death Register" for recording such events.

In summing up, one of the ways that will yield a lot of improvement to maternal death rates is greater attention to patient care to minimise the impact of avoidable factors; accuracy in recording patient's data, and a sense of responsibility at all levels of medical care, from the lowest level health worker through all cadres right up to the specialist who must assume overall responsibility for the patient's outcome.

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