

## MATERNAL MORTALITY—UMAID HOSPITAL, JODHPUR

by

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Maternal mortality, no doubt, is on gradual decline even in developing countries like ours for last two decades. In developed countries like England (0.15) and Denmark (0.04), it has lowered significantly (20/1000 in 1946). Maternal mortality is a standard scale of judging the effectiveness of obstetrical services provided to the population and thereby one can formulate the further course of action.

### Material and Methods

Present retrospective study has been done to evaluate our obstetrical services which have yet not been subjected for any such test of analysis in Rajasthan.

During last 6 years 1973-78, there were 221 maternal deaths in the obstetrical wards and the number of deliveries and abortions managed was 35,397, thereby calculated maternal mortality comes out to be 9.06 per thousand births including abortions. The causes of death are divided into direct obstetrical and indirect associated causes leading to maternal death.

### Observations

Maternal death rate is higher in primigravida (51) and in grandmultipara (91). The younger the primigravida, the higher is the death rate. Maximum number of deaths (80%) were in the age

TABLE I  
Maternal Deaths in Present Series

	Years						Total
	1973	1974	1975	1976	1977	1978	
Maternal death	29	26	40	45	37	44	221
Live births	4107	3663	3839	3923	4462	4382	24376
Abortions	1842	1665	2152	1917	1482	2063	11021
Total	5949	5228	5991	5840	5944	6445	35397

Calculated: M.M.R.:—9.06/1000 live birth.

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Accepted for publication on 17-10-79.

group of 25-30 years which is also the highest fertility age group. Out of 221 deaths, 154 (69.5%) were from rural areas and 189 (85%) had no antenatal supervision.



### *Causes of Death*

Table II shows that 146 (66.5%) deaths were due to direct obstetrical causes, while 75 deaths were due to associated causes.

#### (i) *Direct Obstetrical Causes*

*Infections:* Twenty-eight deaths were due to septic abortion and 25 to post-partum sepsis. No death due to tetanus was recorded, as tetanus cases are admitted in isolation ward in M.G. Hospital. Operative procedures like caesarean section (6), rupture uterus (20), obstetric shock (8), were responsible for 15.3% deaths, while eclampsia and haemorrhagic shock accounted for 20 (9.5%) and 31 (14.9%) deaths respectively.

#### (ii) *Indirect causes*

Medical and surgical diseases not uncommonly do complicate pregnancy, labour and puerperium and these concurrent disorders may at times prove fatal. Commonest diseases which are encountered in day to day obstetrical practice are congestive heart disease, nephritis, hepatitis, anaemia, gastroenteritis and pyrexia. During the period 1973-78, there were 75 maternal deaths due to such complicating diseases. Anaemia (23), heart disease (8), hepatic coma (8), pulmonary embolism (13) and cerebral vein thrombosis (4) were responsible for 56 (74.8%) deaths of this very group.

#### *Mortality in Relation to Hospitalization*

One hundred and eighty-nine women (85%) who died had never attended antenatal clinic and all of them reported in the last hours of life with varying degree of haemorrhage, sepsis or obstetrical shock. All emergency cases mostly belonged to rural area and reached the hospital after a quite long and tedious jour-

ney that too after being handled by unqualified personell (Dais).

Out of 221 women who died, 96 women were in extreme need of massive transfusion and rest. Eighty women needed blood transfusion urgently but only 102 had blood transfusion, that too inadequate. This is all due to running away of relatives while asking for blood donation.

#### *Discussion*

Wrigley (1963) and Stanley *et al* (1966) have reported gradual significant fall in maternal mortality in England and Wales; haemorrhage, sepsis, abortion, embolism, and heart disease were the commonest causes which show progressive decline. In the present series, the above causes are the commonest.

Holland and Brews (1969) reported a fall in maternal mortality from 4.6 (1934) to 0.27 per thousand (1966). This is all due to flying squads, better antenatal clinics, greater use of improved anaesthetic and resuscitative—facilities from shock and haemorrhage.

Donald (1969) reported maternal deaths commonly due to abortion (139), toxæmia (104), haemorrhage (92) and heart disease (8).

Guha (1972) reported that out of 46 deaths, 12 (26%), 7 (15.1%) and 4 (8.7%) deaths were due to anaemia, haemorrhage, sepsis and pulmonary embolism respectively.

Heera and Dass (1973) recorded that 57.6% deaths were due to direct obstetrical causes e.g. 123 (22.3%) due to abortions and 193 (35.4%) due to other than abortions like haemorrhage 45 (8.2%), toxæmia 15 (2.8%), anaemia 70 (12.5%), congestive heart failure 30 (5.4%), infective hepatitis 32 (5.76%), tuberculosis 25 (5.4%) were the associated causes. In the present series, 66.5% deaths were due

TABLE II  
Obstetric Causes of Maternal Deaths

Causes	1973	1974	1975	1976	1977	1978
<b>INFECTION</b>						
Septic abortion	0	3	7	6	7	5
Puerperal sepsis	2	5	4	4	5	5
Tetanus	0	0	0	0	0	0
<b>OPERATIVE</b>						
L.S.C.S.	1	0	1	1	1	2
Ruptured uterus (Repair)	0	4	4	3	2	5
Subtotal hysterectomy	0	0	0	0	1	1
Obstetrical shock	0	1	1	2	0	4
<b>HAEMORRHAGE</b>						
M.T.P.	0	0	0	0	0	0
Abortion	2	0	1	1	1	1
A.P.H.	1	1	2	2	3	1
P.P.H.	1	2	2	2	1	2
Ectopic	0	2	0	0	0	0
Coagulation failure	0	0	1	1	1	0
Inversion uterus	0	0	0	1	2	2
<b>ECLAMPSIA</b>						
Molar preg.	1	0	1	1	0	0
<b>Total</b>	<b>12</b>	<b>20</b>	<b>27</b>	<b>29</b>	<b>27</b>	<b>31</b>

TABLE III  
Non-obstetrical Causes of Maternal Deaths

Causes	1973	1974	1975	1976	1977	1978
Anaemia	8	2	4	4	2	3
Heart failure	1	0	1	1	2	3
Hepatic coma	0	0	2	1	3	2
Pulmonary embolism	4	3	2	2	2	0
Cerebral vein thrombosis	1	1	1	1	0	0
Meningitis	0	0	2	0	0	0
Intracranial haemorrhage	1	0	0	0	0	0
Renal failure	1	0	0	0	0	0
Appendicitis	0	0	0	1	0	0
Bronchopneumonia	0	0	0	0	0	1
Penicillin reaction	0	0	0	1	0	0
Epilepsy	0	0	0	1	0	0
Peritonitis	0	0	0	3	0	0
Thrombophlebitis	0	0	1	0	0	0
Mismatched blood-transfusion	1	0	0	0	0	0
				others	0	4
<b>Total</b>	<b>17</b>	<b>6</b>	<b>13</b>	<b>16</b>	<b>10</b>	<b>13</b>

Others one each } Cancer cx—2.  
Cerebral malaria poisoning.



to direct obstetrical causes like sepsis (24.5%), haemorrhage 31 (14.9%), eclampsia 20 (9.5%) and operative procedure 34 (15.3%), while 75 deaths were due to associated causes like anaemia 23 (11.7%), intracranial haemorrhage 1 (6.2%) hepatic coma 8 (4%), pulmonary embolism 13 (6%) and cerebral vein thrombosis 4 (2%) of total deaths.

Konar *et al.*, (1973) studied abortion mortality as 9.8 per thousand. Haemorrhage (21%) and septic shock (68.8%) were the common causes. In the present series, there was not a single death following medical termination of pregnancy. Chandiook and Devi (1974) reported that 95% deaths were in unbooked cases, and septic abortion, post partum sepsis stood out as the leading causes of death.

Mukherjee and Kotwani (1979) have studied the changing trend in maternal mortality over two decades (1962-69 and 1970-77), giving an incidence of 8.9 as compared to 4.9 per thousand respectively. Deaths due to sepsis, haemorrhage, toxæmia, anaemia and illegal abortion have reduced significantly.

#### Summary

(1) Maternal mortality rate at Umaid Hospital, Jodhpur is 9.8/1000 live birth (including abortions).

(2) Maternal deaths due to direct obstetrical causes were due to sepsis, haemorrhage, eclampsia and operative obstetrical shock. Most of them could have

been avoided by providing antenatal facilities and adequate blood transfusion.

(3) Amongst the associated causes, heart disease, anaemia, hepatic coma and pulmonary embolism were the chief causes which are also avoidable.

#### Acknowledgement

We thank the Principal and Controller, S.N. Medical College, Jodhpur for permitting us to publish this paper.

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