

# EMERGENCY, REFERRED AND LATE ADMISSIONS FOR DELIVERY‡

by

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## Introduction

Maternal and child health problems cover a broad spectrum of obstetric management. On the one hand we have developed countries concerned with problems like congenital anomalies, genetic deformities and behavioural problems, on the other hand we have in developing countries the prime concern of reduction of maternal and perinatal mortality, spacing of pregnancies, prevention of communicable disease and improvement of nutrition.

The social awareness and the acceptability of a woman at term to attend the hospital for delivery varies with different

groups. Even today, home deliveries comprise a large number in our country, more so, in rural communities. We find mothers who come to the hospital in the phase of imminent delivery and who still regard hospitals as "shelter homes only when it rains!"

One of the least studied but perhaps the most important factor which has a great impact on the perinatal outcome is the type of admission and its relation to the time at which the woman was admitted for delivery.

## Material and Methods

*Aims and Objectives:* This case-control study was undertaken at the Nowrosjee Wadia Maternity Hospital, Bombay from 1st April to 31st May 1982 to:

1. Estimate the incidence of emergency, referred and late admissions.
2. Identify the factors for emergency, referred and late admissions.
3. Compare the patient characteristics of emergency, referred and late admissions with booked cases.
4. Assess the risk factors associated with the type of admission.
5. Evaluate the abilities and facilities

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of institutions to effectively handle such admissions.

6. **Recommend** steps by which such admissions can be reduced to improve the perinatal outcome.

#### Definitions

The following definitions were used: An *emergency* admission was a case who arrived at the hospital solely for delivery, who received no previous antenatal care and who delivered within 24 hours of admission.

A *referred* admission was a case not booked at this hospital but referred from another institution for delivery.

A *late* admission was a booked case who delivered within one hour of admission. It was categorized as: (a) patient without obstetric complications and delivering within one hour of admission, and (b) patient with obstetric complications for which they should have reported earlier for effective management.

A *control* was a case which was registered, arriving either with or without complications, who reported in time and delivered after one hour of admission. For each study case two controls, one before and one after the case were selected.

*Neonatal death* was defined as death of the newborn before discharge from the hospital, irrespective of the period between delivery and discharge.

Standard forms and definitions were used to record data for both the cases and the controls. All tests of significance were computed using the 0.05 level of confidence.

#### Results

Sociodemographic features revealed that majority (85.7%) of the late admissions were among the multiparas. This could be attributed to their preoccupation with other children at home, and with overconfidence resulting from a previous normal delivery. Conversely, primiparas had the highest rate (53.8%) among the emergency admissions which could be accounted for by their lack of past experience and anxiety associated with their first pregnancy (Table I).

The emergency cases had the lowest (4.2 school years) mean scholastic achievement compared to the other study groups. Lack of formal education at the primary level was found to be responsible for a pregnant woman to remain unregistered throughout her pregnancy and not appreciate the gravity of her problem. As against this, the mean scholastic achievement for the late admissions and the controls was 6.2 and 7.5, respectively, which shows their basic understanding of early antenatal care (Table I).

Emergency cases formed the lowest socioeconomic group compared to the

TABLE I  
Sociodemographic Features

Feature	Emergency N = 13	Referred N = 32	Late N = 147	Control N = 400
Mean age (years)	25.8	25.0	25.9	24.9
Primiparity (%)	53.8	21.9	14.3	48.5
Multiparity (%)	46.2	79.1	85.7	41.5
Mean Scholastic achievement (school years)	4.2	5.5	6.2	7.5
Economic status (Rs/month)	403.9	500.2	578.9	700.0



other study groups. This shows that cases with higher socioeconomic status were less likely to present as emergency admissions (Table I).

Ninety per cent of the referred cases were admitted within one hour of reporting, the reasons as reported by them were obstetric complications, lack of facilities elsewhere which necessitated admission, irrespective of the stage of labour. Referred cases were admitted immediately. Late admissions were given the second priority (84.4%) on account of the imminent state of labour they were in which warranted an immediate admission. About 60 per cent of the controls reported in time for delivery which reflected on the good and regular antenatal care they received (Table II).

Table III shows that one of the many reasons for late admissions could be attributed complacency due to the fact the patient had already planned her place of

delivery, as seen in 98.6 per cent of the late admissions. Referred cases who had planned to deliver at a particular hospital were refused admission at the place of their choice because they were not registered there. Emergency cases formed the highest group of patients who had not planned their place of delivery, because of their lack of awareness of antenatal services and their negligent or indifferent attitude throughout pregnancy. In other words, with good antenatal care, planning for the place of confinement comes automatically to a registered patient as she is least likely to face labour in unforeseen places.

7.7 per cent of the emergency cases, who rushed for confinement at the eleventh hour, were not even in labour. Majority (70.0%) of the controls were admitted in early first stage of labour which undoubtedly was the ideal time for admission. This reflects on an overall

TABLE II  
Time Factor

Factor	Emer- gency N = 13	Referred N = 32	Late N = 147	Control N = 400
Admissions within first hour of reporting (%)	69.2	90.0	84.4	59.2
Time lapse between admission and delivery (Mean hours)	3.9	3.7	0.5	6.8

TABLE III  
Place Planned for Delivery

	Emer- gency N = 13 %	Referred N = 32 %	Late N = 147 %	Control N = 400 %
Planned				
Hospital of actual delivery	30.8	21.9	98.6	97.2
Other Hospital	30.7	71.9	0.0	1.3
Not Planned	38.5	0.2	0.7	1.2
Unknown	0.0	0.0	0.7	0.2

successful outcome of the antenatal care received. Among the emergency admissions, 38.5 per cent came in the early 1st stage of labour, while 45.9 per cent reported during the late 1st stage, 2nd stage or immediately delivered following admission. Late admissions formed the highest number of cases admitted during the 2nd stage of labour. It is interesting to note that no referred case delivered immediately after admission. However, 15.4 per cent of the emergency admissions and 14.3 per cent of the late admissions delivered immediately after admission. This could be due to the early realisation among the referred cases of the complications arising from deliveries taking place in non-convulsive environments. (Table IV).

The incidence of breech deliveries was the highest in the referred cases compared to the other study groups. Regular antenatal care would have resulted in proper management of these cases. Lack of expertise in management of a breech presentation in labour could be attributed to this high incidence. Caesarean sections were also high (12.5%) among the referred cases mainly due to lack of facilities and expertise. The second highest group were the emergency cases (7.7%). Lack of antenatal care and no prior pelvic assessment, along with the presence of foetal distress accounted for the higher incidence of operative interference. The incidence of caesarean section was lowest (1.4%) among the late admissions because they were multiparas (Table V).

TABLE IV  
*Intranatal Outcome*

Stage of Labour	Emer- gency N = 13 %	Referred N = 32 %	Late N = 147 %	Control N = 400 %
No labour experienced	7.7	6.2	0.7	10.0
Early 1st stage	38.5	37.5	6.1	70.0
Late 1st stage	23.1	50.0	57.8	17.9
2nd stage	15.4	6.2	19.7	1.0
Immediate delivery	15.4	0.0	14.3	0.0

TABLE V  
*Type of Delivery*

Type of Delivery	Emer- gency N = 13 %	Referred N = 32 %	Late N = 147 %	Control N = 400 %
Spontaneous vertex	92.3	81.2	94.5	88.2
Breech	0.0	6.2	3.4	1.7
Caesarean section	7.7	12.5	1.4	5.2
Forceps	0.0	0.0	0.7	3.0
Vacuum extraction	0.0	0.0	0.0	0.7
Rupture uterus	0.0	0.0	0.0	0.7
Unknown	0.0	0.0	0.0	0.2



The most commonly reported maternal complications were premature rupture of membranes which was highest in the emergency group (15.4%) and mechanical dystocia which was highest among the referred cases (6.2%) (Table VI).

genital malformations and others was higher in the emergency cases than in the other study groups. The incidence of dysmaturity was higher in the referred group (Table VIII).

The aetiology for the respective type of

TABLE VI  
Maternal Complications

Maternal Complications	Emergency N = 13 %	Referred N = 32 %	Late N = 147 %	Control N = 400 %
Premature rupture of membranes	15.4	3.10	2.0	6.0
Mechanical dystocia	0.0	6.2	0.7	1.2
Prolonged labour	0.0	3.1	0.0	1.0
Cord prolapse	0.0	0.0	0.0	1.0
Prematurity	0.0	0.0	0.7	0.2
Foetal distress	0.0	3.1	0.0	0.0
Incoordinate uterine action	0.0	0.0	0.0	0.2
Postdatism	0.0	0.0	0.0	0.5
Other/unknown	0.0	0.0	0.7	0.2
Total	15.4	15.6	3.4	10.3

The emergency cases had the highest rate of neonatal deaths (23.1%) as compared to the referred cases (6.2%) and late admissions (2.0%). The same trend was seen for the stillbirth rate. The emergency cases had the highest incidence (46.2%) of low birth weight (<2000 grams). (Table VII).

The reported incidence of neonatal complications like asphyxia, prematurity, con-

admission could be traced to the following factors:

**In Emergency Admissions:**

30.8% were negligent or indifferent to antenatal care.

23.1% were not aware of antenatal services.

7.7% were not permitted by elders to receive antenatal care.

TABLE VII  
Neonatal Outcome

Neonatal Outcome	Emergency N = 13 %	Referred N = 32 %	Late N = 147 %	Control N = 400 %
APGAR SCORE (8 +)	61.5	87.5	91.8	96.5
Neonatal Death	23.1	6.2	2.0	0.5
Still Birth	15.4	6.2	0.7	0.2
Birth Weight (Mean Grams)	2048.5	2371.6	2405.2	2384.2

TABLE VIII  
Neonatal Complications

Neonatal Complication	Emer- gency N = 13 %	Referred N = 32 %	Late N = 147 %	Control N = 400 %
Asphyxia	15.4	6.2	6.0	2.9
Prematurity	30.8	9.4	6.0	7.2
Dysmaturity	7.7	9.4	5.4	3.5
Congenital malformations	7.7	3.1	3.4	0.0
Other	15.4	3.1	2.0	3.1
Total	77.0	31.2	28.0	11.7

7.7% complained of nonavailability of nearby antenatal services.

30.8% gave no reason at all.

For **Referred Admissions:**

18.1% referrals complained of no room available at the referring hospital.

6.2% complained of inadequate personnel at referring centre.

6.2% were referred because of inadequate expertise at referring centre.

3.1% were in poor health to be managed at referring centre.

3.1% were unable to pay the charges of the referring centre and

3.1% referring hospitals had no electricity.

In **Late Admissions:**

30.6% had misjudged labour time.

25.5% had not realised the onset of labour.

8.8% had long distance travel or slow transport.

6.1% could not avail of planned contact person.

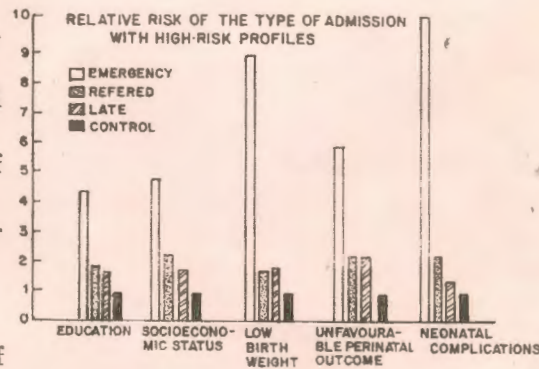
6.1% did not realise the seriousness of complications, and

5.4% had no reason for coming late.

The following relative risk factors were evaluated in this study: (a) lack of formal education, (b) low socioeconomic status, (c) low birth weight, (d) unfavourable perinatal outcome, and (e) high incidence of neonatal complications.

The risk factor ranged from 4.3 times to 10 times higher in the emergency group than the controls. The referred and late admissions were only two times at greater risk than the controls (Fig. 1).

FIGURE-1



### Conclusions

It can be concluded that although the emergency cases were 1.4 per cent of the total deliveries during the study period, they were exposed to the highest risk of maternal and perinatal complications as already stated. At this hospital the incidence of referred cases was 3.5 per cent and late admissions 15.9 per cent.

With problems that we are facing today, the solution neither lies in one extreme of



utopian ideas that everything shall be well one day, nor in another extreme of grim despair that we cannot do anything and this sordid state will go on forever. Such a challenge posed by emergency admissions as well as referred and late admissions to perinatal medicine deserves careful attention and meticulous work-up.

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0.0	0.5	1.0	1.5
1.1	0.5	1.1	1.1
1.1	0.5	1.1	1.1

The risk factor ranged from 1.1 to 1.1 in some higher in the emergency group than the referred. The referred and late admissions were only two times as high as the emergency (1.1).



It can be concluded that although the emergency cases were 1.4 per cent of the total deliveries during the study period, they were referred to the highest risk of perinatal and neonatal complications as shown in Table 1. At this hospital the incidence of referred cases was 1.1 per cent and the admission 1.1 per cent.

With reference to the referred cases, the authors believe that in the referred

group, the incidence of perinatal and neonatal complications was 1.1 per cent. The referred cases were 1.1 per cent of the total deliveries during the study period. The referred cases were 1.1 per cent of the total deliveries during the study period. The referred cases were 1.1 per cent of the total deliveries during the study period.

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