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*Review*

DOMICILIARY MIDWIFERY IN RURAL INDIA  
APPRAISAL AND RECOMMENDATIONS

by

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The midwifery services in rural areas of India are being provided almost wholly by the "Dais" i.e. the traditional birth attendants, a few of them with a brief training and a majority still with empirical experience only. It is estimated that 20 million deliveries occur in a year, 80% of whom occur in rural areas.

In urban areas, the hospitals and the maternity homes run by the government, municipal corporations and voluntary organisations take care of only 25 to 30% maternity services. Rest are still conducted by practising lady doctors and Nurse-midwives as domiciliary confinements. Most of the women in India still object to the presence of and conduction of delivery by male doctors. In rural areas almost cent per cent deliveries are

conducted as domiciliary confinements by the Dais except at a few townships where primary health centres have been set up. In general, there is one qualified doctor for every 6000 and one lady doctor for approximately 40,000 of population. The ratio is much worse for rural population since there is a higher concentration of doctors in the urban areas.

On the basis of recommendation of Bhore Committee (1946) and Mudaliar Committee (1961), the whole country was reorganised into Community Development Blocks with a Primary Health Centre unit in each to cover 80,000 to 100,000 of population. In view of the high maternal and perinatal mortality one auxiliary nurse midwife (ANM) for a population of 5,000-6,000, to work under supervision of a public health nurse for twice that population was recommended. The committee also deplored the practices of untrained and unregistered Dais and recommended that such a practice may be made a penal offence (Mudaliar 1961).

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To meet the health needs of the country, considering multiple problems of health and their magnitude, the All India Institute of Medical Sciences at New Delhi started a comprehensive health services project at Ballabgarh community development block in Haryana State in 1964, for proper orientation and training of doctors in community medicine. In this article the observations are made on the experience of over five years of organisation of maternal health services in this C.D. block. The outstanding problems and their possible solutions are discussed.

#### *Demography of Ballabgarh C.D. Block*

This block covers a population of 80,000 which comes from 92 villages scattered in an agriculture area of 144 sq. miles. The Delhi-Agra national highway and the railway line traverse the block and River Jamuna touches the outskirts on the eastern side. Three metalled roads radiate from Ballabgarh connecting about 15 big villages. Most of the other villages are accessible on jeeps but about a quarter become inaccessible during monsoon. The main occupation of people is agriculture but rapid industrialisation is taking place along the highway. The population is predominantly Hindu, with few muslim villages.

Demographic Map of C.D. Block, Ballabgarh.

#### *Pattern of Midwifery Services*

With a birth rate of 52/1,000, around 3,800 deliveries taking place every year and about 2,500 women expected to be pregnant at any one time, the health services were established, with an infant mortality of 135/1,000 live births and maternal mortality approximately 5-6/1000 LB., in 1964.

The whole block is divided into 4 zones with a Primary Health Centre (PHC) in one of the bigger and Central villages.

Each zone is further divided into 4-5 sectors—each comprising of 5-6 villages with a population of 5,000 where Extension Health Centre (EHC) or sub-centre is located in the key village. The field staff posted at each EHC consists of 1 Auxillary Nurse Midwife, 1 Trained Dai and a male Basic Health Worker. Apart from EHC staff, each PHC is provided with a Lady Health Visitor (LHV) or Public Health Nurse (PHN), a Sanitary Inspector, an Auxillary Nurse Midwife, 1 Pharmacist, a Laboratory Technician and 2 senior residential physicians and rotating interns (undergraduate trainees). A vehicle is stationed at each PHC.

This staffing pattern provides—1 Auxillary Nurse Midwife and a trained Dai for 5,000-6,000 population (250-300 birth/year) and Lady Health Visitor (LHV) to supervise work of 3-4 ANMs (25,000 population). The maternal health services programme have been evolved in the community on the following lines.

(A) Through clinics—1. EHC. A weekly antenatal clinic is held at each EHC under the supervision of a Lady Health Visitor (LHV) and with the help of general duty doctor. It is visited once in 4 weeks by the specialist.

2. PHC: Once in a week an integrated antenatal, postnatal, family planning, gynaecology and well-baby clinic is held at each PHC in which Paediatric Specialist and Family Planning Workers also join.

(B) Domiciliary Services: Experiment on organisation of domiciliary midwifery was taken up for two reasons.

(1) It was considered very difficult to create many maternity beds at EHC or PHC because of the limited staff and other resources, though 25-30 beds are

always available for maternity at 60-bedded block hospital.

(2) Women do not find it practical to leave the home and children unattended during their confinement at hospital. In a hospital where food is not provided creates lot of inconvenience to the whole family and children.

The main feature of this service is to screen all the prenatal women and pick the "high risks". Guidelines have been laid for defining the "high risk" expectants and the infants. All such patients are referred to the specialist for investigation and treatment. This is made possible by enlisting all the pregnant women as early during pregnancy as feasible through systematic home visiting. Normal cases are encouraged to have their deliveries at home. Standing orders for the management and referral of obstetrical emergencies have been issued to the ANMs and LHVs. Use of Pethidine is permissible to LHVs and ANMs. Ergometrine is supplied from the PHC and a free use of this drug for control of haemorrhage during abortion and post-partum period is encouraged. LHVs are further permitted to perform and repair episiotomy, if required. The education of the mother and the family towards nutrition, personal hygiene and health, immunisation and family planning is rendered individually as well as through group talks and demonstrations.

Periodic refresher training is arranged from time to time for ANMs and Dais to

renew their technical skills and to practise methods of asepsis. All ANMs have to undertake a 2-3 week course in Applied Nutrition.

Unlike other PHCs, the data on births, deaths, morbidity, and antenatal and postnatal record, and personal preventive services are strictly maintained which are pooled at the headquarters for analysis.

#### *Observations and Discussion*

With this network of paramedical staff working for MCH services in the block for the last 5 years (1964-68), the evaluation of the services is offered in the following tables. Table I shows the maternal and Infant mortality rates. The analysis of maternal mortality is given in Table II. The apparently rising figures are due to better recording system and regular verification of each maternal death individually.

Table III shows the total number of pregnancies and the population covered by the trained staff during the domiciliary service. It may be observed that coverage during confinement is not even half of the antenatal coverage. Yet the results of the prenatal services are very encouraging as accidents like rupture of uterus have not been reported in this period. No death due to eclampsia and ruptured ectopic pregnancy was recorded during the same period. Most of the "High risks" were investigated and delivered at the hospital. If the patient finds herself unable to leave home, even the treatment

TABLE I  
*Infant and maternal mortality in C.D. Block Ballabgarh 1966-68*

Year	Population	Total births	Birth rate	Infant Mortality/1000 LB	Maternal Mortality/1000 LB
1966	74,197	3,927	52.9	105.0	1.01
1967	78,345	3,808	48.6	107.1	1.57
1968	81,182	3,591	44.2	101.9	2.22

TABLE II  
Analysis of maternal Deaths (1966-68) by underlying causes

Causes	No.	Preventible	Non-preventible	Total
<b>A. Obstetric</b>				
1. Haemorrhage	8			
PPH	3			
APH				
abortion	5			
2. Cerebrovascular accidents	3	9	3	12 (67%)
3. Obstructed labour	1			
<b>B. Non Obstetric</b>				
Enteric fever & measles	4			
Anaemia	1	5	1	6 (33%)
Rheumatic heart disease	1			
<b>Total:</b>	<b>18</b>	<b>14 (78%)</b>	<b>4 (22%)</b>	<b>18</b>

TABLE III  
Antenatal and Perinatal Coverage (1966-1968)

Year & block	Population	Total births of block	Population effectively covered by MCH staff	Percentage of pregnant mothers registered	Percentage of deliveries conducted by trained staff
1966	74197	3927	66,000	59.6%	9.03%
1967	78345	3808	67,000	65.0%	16.25%
1968	81182	3591	66,500	70.9%	26.3%

of serious conditions like pre-eclamptic toxæmia and hyperemesis gravidarum was given at home with the help of LHV and ANM.

Why only 70% of the women are registered during antenatal period and only a few attended during deliveries by the trained staff stationed at village level? Few factors have been analysed and light thrown on difficulties encountered by this staff in rendering these services.

#### A. Physical Factors

(i) *Transport*—The villages under charge of one ANM are situated at a distance of 2-4 miles from the main village of her residence, connected by bullock cart routes. Bicycles have not been pro-

vided to all the ANMs. Still the ANM is usually able to visit each village once in a week for systematic home visiting, but is unable to reach at the time of confinement.

(ii) *Means of communication*—Even though the ANMs build commendable rapport in the village, the 2-3 mile walk to the other village prevents the manfolk to call her at the time of delivery, particularly during inclement weather. The local Dai proves to be very handy on such occasions.

#### B. Personal Factors

Majority of the ANMs are a very young group between 20-25 years and usually belong to urban areas, and thus find it

difficult to be placed in the village. No adequate facility is provided by the Community at the EHC. Continuity of their services is broken by their marriage or maternity leave. There is no provision for the reserve (locum) staff to replace them.

### C. Cultural Factors

The local untrained Dai, relatively an older person, with an established rapport in the community, though not a very respected person, is most readily available at the time of confinement. The local Dai, in addition to conducting the delivery, acts as a handy woman too. Hence the ANM is neither informed nor called at the time of delivery. Of the 18 maternal deaths, 14 had been attended by local Dais only at the time of confinement. Two of these cases were grossly mismanaged. The process of delivery is a business between old women of the family and the untrained Dai, so much so that most of the husbands are unaware of the facts about the course of labour which had led their wives to death.

It will take a long time before an ANM will be able to take over completely from these women and probably never till a trained Dai or an ANM will be posted in each village. There is a pressing need for educating the village community to ward off the old traditions and unhygienic customs and harmful practices by accepting these Dais, few of whom cannot even see properly.

### D. Work Load of ANM

Being an integrated medical and public health worker, the responsibilities of the ANM range from clinic to the field work, including care to women during antenatal, natal and postnatal periods to infants, toddlers and pre-school children. Immunisation is an integral part of their

service. Further ANM plays the major role in the operation of Family Planning Program. In addition, the ANM keeps a systematic record of all the activities which are submitted to the headquarters every month.

Having understood the plight of an ANM (1 for 250-300 births) who is the nucleus of maternal health services, entrusted with comprehensive care to the family, it becomes obvious that the one specific activity of "delivery" becomes the target for neglect by her, because she is hard-pressed with time.

There is an urgent need to conduct time and motion study on the work load of an ANM giving particular consideration to travelling time and the time spent on one delivery which may range from 1 hour to 5-6 hours when she may be held up to make observations and repeated visits to a woman in labour.

### *Recommendations for effective domiciliary Services*

#### 1. Intensive Education and Community Participation

The persistence of high infant and maternal mortality in spite of a large number of auxiliary nurse midwives is largely due to indifference shown to the services by the community. It may be noted that of the 18 maternal deaths (Table II) though 7 had been given prenatal care by the ANM and 14 were attended by the local indigenous practitioners or physicians yet the medical help was sought in only 3 cases during the confinement. It is observed that still people are partly unaware of the facilities available to them through the paramedical staff and the hospital and partly callous to avail of these services. At this stage there is great need for educating the community to become alive to the health needs, to become aware of deficiencies and disease.

No amount of freely available services can bring about a change in the attitude of the community. The people should be educated not to be suspicious of these services but to understand their responsibilities towards maintaining adequate health. Women in villages are socially handicapped. Their illnesses during pregnancy are ignored, neglected, concealed and finally attributed to evil spirits. The health education programmes should highlight the importance of prenatal care, ailments during pregnancy and hazards of haemorrhage during pregnancy and after delivery. Individual maternal deaths may be discussed with the local leaders and female members. Though it appears to be a long term recommendation, yet health education through mass media, group demonstrations and school health education service, particularly for priority programmes can bring about dramatic results.

### 2. *Training of Dais*

It is further felt that the failure of trained staff to attend a confinement is mostly due to distances. Provision should be made to station one trained Dai in each village.

With this view a survey of 146 indigenous Dais was carried out in this block by our colleagues. The survey revealed that 45-50% of such Dais had felt the need of training and were willing to continue the services in their village after the training. It is suggested that at least one Dai from each village should be trained at the Primary Health Centre and should work under the supervision and in association with the Auxillary Nurse Midwife. Such Dais will be very helpful as informants, not only for the registration of an event, but also in picking the high-risk mothers and children. Continuous, periodic in-service training in midwifery will be

beneficial and can be undertaken by the public health nurse and the Lady Health Visitor posted at the PHC. With this set up it will not be improbable to remove the untrained ones in due course. In those circumstances when no existing Dai agrees to get training, the village head should be requested to sponsor a candidate—from his own village for training, who will replace all other indigenous Dais after training. Such trained Dais will ultimately become a part of peripheral team of MCH workers and adequate patronage should be accorded to them by the PHC.

### 3. *Injudicious Working of Family Planning Programme*

It is unfortunate that before the community of this country was even prepared to accept the promotive and preventive health programmes, Family Planning was thrust upon it, with high targets laid for the medical and paramedical staff. Not only this but by introducing family planning forthright the family planning workers even try to use coercion to reach near the targets. Such injudicious approaches and practices towards motivation to accept contraception have made people very suspicious of health workers. It is a usual experience of a doctor these days that women deliberately do not reveal the number of children they have. What is actually needed is a steady and continuous programme preceded by intensive education, inculcating confidence for health services.

### 4. *Improved Means of Communication and Ambulance Service*

Having controlled the infections and toxæmias, unforeseen haemorrhage is the most outstanding cause of maternal mortality; 8 out of the 18 maternal deaths were due to haemorrhage in this study.

Rapid transportation of patients can reduce the mortality to a great extent.

#### 5. *Supervision and Administration*

Supervision and co-ordination of the services through the public health nurse and the lady health visitor is to be strictly undertaken. The LHV should ensure a high quality of services rendered, through supervision and training. She should be able to link the peripheral services with the hospital and back. This is very important for women who undergo operative delivery, sterilisation or even an IUCD, insertion.

#### 6. *In-service Training of Paramedical Staff*

The ANMs and LHVs should have periodic regular training in the field of obstetrics, nursing and data recording under the supervision of an obstetrician and gynaecologist.

#### *Summary*

Observations are made on the staffing pattern and achievements of maternal health services at Rural Health Project of ANMs

Provision of 1 ANM and 1 Trained Dai for a population of 5,000-6,000 population (1 for 250-300 births) was expected to cover adequately the maternal and child

health services. The problems encountered in the execution and operation of services and results achieved are discussed.

Recommendations are made to improve the services and thereby reduce the maternal morbidity and mortality. Stress has been laid firstly on an intense health education and community participation programme and secondly on training of indigenous Dai to cover each village.

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*See Fig. on Art Paper I*