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Referral Facility Assessment (RFA)

Maitha Block, Kanpur Dehat District, Uttar Pradesh

July 29 to September 25, 1998

By

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Executive Summary

The Referral Facility Assessment or RFA is one of the three baseline studies to be conducted during Phase I of the "Community Partnership in Safe Motherhood" project. The broad purpose of the RFA was to identify the geographic location and capability of facilities to provide basic and comprehensive emergency care to mothers and neonates living in the project communities of Maitha Block, Kanpur Dehat District. This information is to be used for community-level planning. A secondary purpose was to identify facilities that might have a sufficient caseload of deliveries to serve as a clinical training site for home birth attendants.

Thirty-nine facilities lying within Maitha Block and also within the north-western section of Kanpur City, Kanpur Nagar District, were identified as potentially offering basic and/or comprehensive obstetric or neonatal care services during the enumeration phase. Each facility was visited and information was gathered through a combination of interview and record review methods using data collection instruments that were adapted from forms provided in "Guidelines for Monitoring the Availability and Use of Obstetric Services" (1997).

Thirty-three facilities, representing both the public and private sector, were identified as offering at least basic emergency obstetric care (EOC). These facilities fell into three main categories: government hospitals, charitable or religious trust (society) hospitals, and private hospitals/nursing homes, some of which are incorporated as private companies. Nineteen facilities, representing both the public and private sector, were identified as offering at least basic emergency neonatal care (ENC). Twenty-nine facilities were identified as offering comprehensive EOC. Nearly one-half (14) were also found to offer comprehensive ENC.

Emergency care is largely provided by the government and trust (society) hospitals. Kanpur City is the site of one of the largest medical colleges in Uttar Pradesh, which may account for the large number of facilities offering emergency care. Several facilities have potential to serve as a clinical training site for home birth attendants.

The RFA also intended to gain insight into the facilities' capabilities in managing maternal and neonatal emergencies from the records related to the past one year. The records available were not consistent enough to provide this information. A rank ordering of causes of complications were done by the respondents based on the cases handled by the facilities. Prolonged obstructed labour and ante-partum and post partum haemorrhage are the two most prevalent complications that emerged in the rank ordering. This was supported by data on actual cases handled available from four facilities including the large government hospital. The rank ordering of neonatal complications suggest asphyxia and septicemia are the major causes of complications. There was not enough pertinent actual data to validate these ranking.

There is a large medical community in Kanpur, many of whom were glad that an agency

like Shramik Bharti was addressing the larger issues related to women's health. The administrative machinery welcome the idea and expressed their interest in being involved in the baseline survey. Partnering with the local professionals and administrators would be of benefit to the NGO.

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List of abbreviations used

ACNM = American College of Nurse-Midwives
AIIMS= All India Institute of Medical Sciences
ANM =Auxiliary Nurse Midwife
APH/PPH = Antepartum/ post partum
B-EOC = Basic Emergency Obstetric Care
B-ENC = Basic Emergency Neonatal Care
C-EOC = Comprehensive Emergency Obstetric Care
C-ENC = Comprehensive Emergency Obstetric Care
CMO = Chief Medical Officer
CPSM = Community Partnership in Safe Motherhood
EOC = Emergency Obstetric Care
FOGSI= Federation of Obstetric and Gynaecologists Society of India
HBA = Home based birth attendant
RFA = Referral Facility Assessment
MCH = Mother and Child Health
NGO = Non governmental agency
USAID= United States Agency for International Development

I Background

Nearly one quarter of the estimated 585,000 maternal deaths occurring globally each year take place in India. Increasing access to essential obstetric care will significantly reduce such loss. As part of the USAID-funded PRIME Project, Special Projects Section of the American College of Nurse-Midwives (ACNM) has developed "Community Partnerships for Safe Motherhood". This innovative strategy is designed to reduce maternal and neonatal mortality by increasing access to basic life-saving interventions at the most peripheral levels, i.e., within the home and community, and by reducing delays in transport to referral units where life-threatening complications can be managed.

The strategy involves two complementary training interventions. One is designed for pregnant women, their primary family caregivers and home birth attendants (HBA). The other is a supplemental clinical practicum for HBAs. These two interventions are reinforced through a broader community-sponsored effort that includes a safe motherhood communications campaign, emergency transport mobilization and mortality monitoring. The focus of the interventions is on the most common causes and time periods of death, and on enhancing individual and community-level health care giving, seeking and facilitating behaviors that may prevent death. A community participatory approach will be used. The combination of interventions, focus and approach are what make this strategy innovative.

The "Community Partnerships for Safe Motherhood" project is being undertaken as a collaborative effort between PRIME partners (ACNM and INTRAH) and Shramik Bharti. Shramik Bharti is a non-governmental agency having a long history of working in and around the Kanpur City. The project area is located in Maitha development block, Kanpur Dehat district, located between 25-30 km north west of Kanpur City. It is comprised of a cluster of eleven rural communities having a population of approximately 20,000 persons. The project area was selected by Shramik Bharti because it is an area where they have been working on other developmental programmes and therefore have established a solid relationship with communities, and because it is an area where there are no other maternal and child health care projects being undertaken.

The RFA is one of three baseline and diagnostic studies being undertaken in the "Community Partnership for Safe Motherhood" project. Data collection was carried out between July 29 and September 15, 1998. This report documents the objectives, methods, limitations, findings and conclusions of the RFA.

II Objectives

The objectives of the RFA were to

Determine the number, distribution and capability of health facilities with respect to providing basic and comprehensive EOC and ENC services geographically accessible to the project area, including the number and types of complicated cases seen by these facilities,

Create an information base in order to provide information to be used in community-level problem-solving in the event of obstetric and neonatal emergencies,

Identify health facilities capable of providing EOC and having a caseload sufficient to serve as a clinical site for training for home based birth attendants in selected aspects of emergency care Any such facilities will be further assessed at a later date

III Methodology

The methodology used for the RFA was based on the 'Guidelines for Monitoring the Availability and Use of Obstetric Services' jointly published by UNICEF, WHO and UNFPA (October 1997) and consisted primarily of interview of key functionaries and observation of medical records The original data collection instruments were modified to include information related to a) ENC (personal communication, V K Paul, 1998), b) facility staffing patterns, c) potential for no-cost/low-cost care, and also to address d) problems related to the availability of and access to medical records (see Annexure A)

3 1 Working Definition of Basic and Comprehensive EOC and ENC

Basic EOC includes the following procedures a) administration of parenteral medications (antibiotics, oxytocics, sedatives), b) manual removal of placenta, c) removal of retained products of conception, and d) assisted vaginal delivery (vacuum extraction or forceps)

Comprehensive EOC includes all of the procedures for Basic EOC plus surgery (Cesarean section, hysterectomy, curettage) and blood transfusion

Basic ENC includes the following procedures a) resuscitation, b) prevention and treatment of hypothermia (warmth) to normal, LBW and sick neonates, c) administration of intravenous fluids and parenteral medications (antibiotics) and oxygen, d) administration of gavage feeds

Comprehensive ENC includes all of the procedures for Basic ENC plus Cesarean

section and exchange blood transfusions

Determination of the actual status of a health facility with respect to EOC or ENC was based on the procedures reported as having been performed during the last three months of the specified time period of survey, August 1, 1997 through July 31, 1998

3 2 Working Definition of a Complicated Maternal Case

Haemorrhage, antepartum or postpartum
 Prolonged/obstructed labour
 Postpartum sepsis
 Complications of abortion
 Pre-eclampsia/eclampsia
 Ectopic pregnancy
 Ruptured uterus

3 3 Working Definition of a Complicated Neonatal Case

Low birth weight (<1800 grams)
 Birth trauma or injury
 Asphyxia, no crying for 5 minutes after birth
 Hypothermia, temperature less than 36 degrees centigrade
 Infection, septicemia, ARI or meningitis

3 4 Plans Used to Determine the Number and Types of Maternal and Neonatal Complicated Cases

Plan 1 Followed whenever possible This required entry of the number of each type of complicated maternal and neonatal case treated in the facility for each month during the defined 12-month period (August 1997- July 1998) These were totaled to give the actual number of complicated cases overall and by type

Plan 2 Followed when it was not feasible to record all maternal and neonatal complications (i.e., when this would be too much work) This required entry of the number of each type of complicated maternal and neonatal case treated during four months of the defined 12-month period (i.e., months 1,4,7 and 10) The total number of cases for the four months was then multiplied by three to give the estimated number of complicated cases overall and by type

Plan 3 Followed when data on the number and types complications were not available (i.e., did not exist) or not accessible (i.e., not offered for review or not organized in a manner that allowed for data collection) at the facility This required entry of the total number of all deliveries minus the total number of 'normal' deliveries The remainder of all was multiplied by a factor of 1.25 to give a conservative estimate

of the number of complicated cases for the specified time period

Plan 4 Followed when medical records were either unavailable (i.e., did not exist) or inaccessible (i.e., not offered or not organized in a manner that allowed for data collection) This required the key functionary or person being interviewed to estimate the number of maternal and neonatal complications occurring in the facility

Regardless of the plan used, the key functionary or person being interviewed was asked to rank order the type of complicated maternal and neonatal cases by the frequency with which it was admitted and cared for in their facility during the specified time period

3.5 Boundary of the RFA

The boundary of the RFA was defined by geographic accessibility of potential EOC and ENC facilities with respect to the project area in Maitha development block. Determination of geographic accessibility was made in three steps, as follows

- 1 Prior to the enumeration, the team visited 7 communities in the project area and spoke to individuals and groups to find out where people from their community normally take mothers or babies in the case of birth-related emergencies. A list of the facilities mentioned, both public and private, was drawn up
- 2 The project area is in Maitha Development block. The area within the block was then identified to explore the possible existence of EOC and ENC facilities. Most of this area is agricultural land and the main facilities were the government primary health care facilities (PCHs/CHCs). There are two PHC's in Maitha block. Private facilities, were concentrated in the direction of Kanpur City, lying south and east of the project area along main access roads and naturally bounded by two rivers
- 3 The area lying within these boundaries and leading into and including the north west portion of Kanpur City was identified to explore the possible existence of EOC and ENC facilities

A map of the RFA area, Maitha development block and the north-west section of Kanpur City, is provided in Annexure B. The facilities visited have been numbered on a city map to show the distributed location of the facilities, many of these are along trunk routes leading into the city

3.6 Enumeration of Health Facilities Having Potential EOC and ENC Capability

All health facilities having the potential for EOC and ENC were identified as follows

Public Sector (Government) Lists of government health facilities were obtained from the Chief Medical Officer's Offices in Kanpur Dehat and Kanpur Nagar. These

lists included two large government maternity hospitals in Kanpur City, as well as nineteen PHCs/CHCs in Kanpur Nagar and Kanpur Dehat districts combined, three of which come within the geographic boundaries described above. Note PHCs/CHCs located within the blocks adjacent to Maitha development block were not included as they do not have Lady Medical Officers attached. Moreover, accessibility of these facilities is more difficult relative to accessibility of facilities lying in the direction of Kanpur City on account of frequency of available transportation.

Private Sector Enumeration of private facilities presented certain difficulties. There is no system of registration or licensing of private facilities offering medical care, either by the city municipality or the under any other legal or governmental bodies. Registered Medical Practitioners simply open and operate private nursing homes. In recent years, however, medical professionals have come within the purview of the 'Consumer Protection Act' and a Kanpur Nursing Home Association has started to function on a voluntary basis as a forum for professional support and continuing education. A list was obtained from the Kanpur Nursing Home Association. It included thirty-five health facilities, eighteen of which came within the geographic boundaries described.

In addition, the directory of members of the Federation of Obstetric and Gynaecological Society of India (FOGSI) was reviewed for potential EOC and ENC facilities. While this directory appeared fairly exhaustive, it only contained the names of individual practitioners and not health facilities. The Shramik Bharti team reviewed the directory and, based on information obtained from in-house staff and friends, identified those private obstetricians who were believed and known to offer nursing home facilities.

Finally, to identify private facilities outside of Kanpur City limits, the team visited three private general physicians in three areas (Bhauti, Manda and Kalpi Road) and obtained the names of three facilities having potential EOC.

All public and private sector health facilities listed were initially screened for potential EOC and ENC by telephone or direct contact.

Each facility having potential EOC and ENC was then visited.

3.7 Data collection

Shramik Bharti staff and MotherCare consultant divided into three teams to conduct the RFA (see Annexure C). The teams determined the facilities to be visited based on the degree of comfort perceived by the team members in dealing with a particular facility. Actual data collection was carried out over a period of four weeks, from August 20, 1998 to September 15, 1998.

Each team experienced the need to visit the same facility at least three times on an average. The first visit would be taken up in explaining the purpose of the RFA. Most

contacts appeared to wish to be a part of the effort and showed willingness to share data. During this visit a date would usually be set when the registers or data sources would be made available to the team to review. In most cases, during the second visit, it was found that the record keeping system was either not organised adequately, or was not easily accessible, to provide data as required by the survey. Therefore, a third visit would be arranged to actually gather whatever data was available or accessible. The type of plan used to collect the data was determined by the particular state of records at a particular facility. Six facilities of thirty-nine on the list were unable to provide any data.

3.8 Sources of the Data and Persons Providing the Data

The RFA team was able to directly access/review records in only eight of the thirty-nine facilities (21%) visited. The types of data sources included general admission records, maternity ward registers, patient charts, operation theatre registers, delivery books. In ten facilities (26%), data were reported by the respondents interviewed from sources which included computerized print outs and billing documents. Eleven respondents (28%) did not report from documents i.e., had no hard data.

3.9 Plans Used to Collect the Data on the Number and Types of Complicated Maternal and Neonatal Cases

As discussed in Section II, Methodology, not all of the health facilities assessed were able to provide actual data retrieved from medical records maintained on the according to Plans 1, 2 or 3. In some cases, data were only available as estimates from providers working at the facility. Such data were considered under Plan 4.

All government health facilities had complete records, hence the data were collected using Plan 2 due to the large numbers of the clients served. The Trust run hospitals also had fairly complete records. Very few of the other private facilities visited, however, maintained a record keeping system for planning or management purposes. In the private health facilities, once the patient is discharged, the records are kept only for audit requirements.

The instances below list the conclusions made about the data when faced with the varied situations found on site while looking at medical records.

- 1 *No data, not willing* Doctor or person-in-charge did not wish to share any data.
- 2 *No data, not available* Doctor or person-in-charge were willing to provide information. However, they neither had the data nor were they able to reconstruct the data from experience. The only information available from such facilities was on

the type of facility, staffing, cost and services offered. There was no information on the volume of births handled and whether they are normal or otherwise. For the analysis of maternal complications, these facilities have been clubbed with the first group which were unwilling to provide data.

- 3 *Data estimated (Plan 4)* In this circumstance, no data were maintained in medical records. However, the doctor or person-in-charge was able to reconstruct average numbers or estimates based on experience, and able to rank the top three causes of maternal and neonatal complications according to the frequency that these were admitted and cared for in their facility.
- 4 *Data available, sampled for 4-month period (Plan 2)* Data were available in medical records for the 1,4,7,10 months from which annual figures could be computed. Even in this circumstance, however, there is an instance where neonatal morbidity has not been recorded.
- 5 *Data available, actual numbers for 12-month period (Plan 1)* The data were available in the medical records for all the months.

3.10 Use of indicators

The tool design had provided for six indicators to assess the status of the facilities in the context of macro level population. Since the records available were not sufficiently accurate, no attempt was made to use these indicators for analysis.

IV Findings

4.1 General Characteristics of Health Facilities Assessed

A total of 39 facilities were visited and assessed. These included two large government hospitals and four large private hospitals run by trusts. In general the quality of data at these large facilities was better than that available from the smaller private company-owned or individual-owned nursing homes. The total numbers of deliveries conducted at each facility also varied considerably from a maximum of 4,470 in the large government maternity hospital to a minimum of 15 in a small maternity nursing home. Six facilities gave no information on the number of deliveries conducted in a year. Comprehensive EOC and ENC was more likely to be available at the larger facilities, however 63% of individually owned nursing homes also provided these services. There was no facility that specialised only in ENC. The large facilities which offered comprehensive EOC also tended to offer comprehensive ENC. Table 1 presents the basic characteristics of the facilities surveyed.

TABLE 1 General Characteristics of All Health Facilities Assessed

VARIABLE		ADMINISTRATIVE STRUCTURE OF THE HEALTH FACILITY				
		Government/Public		Private Trust or Society Hospital	Private Company Hospital	Individual(s) Nursing Home
		Hospital	PHC			
1	Total Number of Facilities	2	3	4	3	27
2	Quality of records on maternal complications					
	1 Plan 1 and Plan 2 (Complete)	1	-	2	-	7
	2 Plan 3 (Incomplete)	0	-	5	3	4
	3 Plan 4 (Estimated)	0		%	3	%
	4 Not Available	%	1	-	%	%
	5 Unwilling to provide		0	5	3	4
			0	0	3	8
			%	%	%	%
			-	2	3	2
				5	3	6
				%	%	%
				-	-	1
						1
						%
						1
						1
						%

	3	Average number of deliveries last year per health facility	2983	NA	795	204	177
					(data for 3 facilities)	(data for 2 facilities)	(data for 2 facilities)
		Proportion offering					
	1	No EOC		66%	-	-	22%
	2	Basic EOC Only		33%	-	-	15%
	3	Comprehensive EOC	100%	-	100%	100%	63%
	5	Proportion offering					
	1	No ENC		66%		66%	59%
	2	Basic ENC Only		33%	25%	-	11%
	3	Comprehensive ENC	100%		75%	33%	33%

4.2 Government or Public Health Facilities

The two government maternity hospitals assessed in the study are referral hospitals which cater to a large area which includes Kanpur City and most of the neighbouring rural areas including Maitha development block of Kanpur Dehat. The two government facilities under the study carry together account for 50% of the maternity cases reported during the past year.

The largest number of births were reported at the 210 bedded maternity hospital attached to the Medical College (popularly known as *jachha-bachha*, the local term for mother and child) and the next highest at the District Women's Hospital, with a strength of 265 beds. As can be seen from data on deliveries presented later in this section, these hospitals bear a large patient care load related to obstetric emergencies originating from within the city, as well as from within the surrounding rural areas.

The government health facilities are free of charge and economically accessible for even the most economically disadvantaged. These hospitals also have emergency facilities available round the clock. Each of these facilities have over 30 obstetricians on the staff and handle a load of above 100 deliveries each month. These hospitals have a complement of staff present in the hospital during the night. Consultants, including the Medical superintendents, are on call for complicated emergencies. One of the hospitals is attached to the Medical College and therefore have training expertise among its staff. Most of the training though is at the level of medical undergraduate and postgraduate students. The other government facility is currently appointed as the district training center for training of doctors and other health staff in current Reproductive and Child Health program.

Apart from the large urban hospitals, the government health infrastructure also provides for primary health centres (PHCs) and sub-centres (SCs). Three primary health centres were assessed in the RFA. Only one of them had in-patient beds and provided basic EOC. Another had only one bed as a stand by in case of dire emergency.

TABLE 2 Type and Bed Strength of Government/Public Health Facilities Assessed

Type of facility	Total	Bed Strength				
		None/ NA	≤ 10 beds	11-30 beds	31-60 beds	> 60 beds
Govt Hospital	2					2
Govt PHC	3	1	2			
Total	5	1	2	-	-	2

In the government hospitals there is a large complement of staff present round the clock. Though the hospitals have access to medical and nursing staff round the clock, neither have a blood bank facilities available.

In the health centres staff is primarily available during the day. Only one of the three facilities has an Obstetrician attached to it. The Table 3 overleaf shows the percentage of facilities and the availability of staff.

TABLE 3 Key Staff Availability in Public Facilities

Available at night	Hospitals (n=2)			Health Centres(n=3)		
	Available	Available at night	Available in 30 mins	Available	Available at night	Available in 30 mins
Physician				100%	33%	33%
Obs/Gynaecologist	100%	100%	100%	33%		
Paediatrician	100%	100%	100%			
Anaesthetist	100%	50%	100%			
Nurse	100%	100%	100%			
Blood bank Technician						

4.3 Private Health Facilities

The private medical facilities in the city vary in size as well as the philosophy through which they function. Three distinct types came under the scope of this study:

Charitable Trust or Religious Society Hospitals These are set up by religious or philanthropic organisations with service motives and engage professionals to provide medical care.

Private Limited Co A few facilities providing medical care in recent years are structured as private limited companies. The philosophy behind such a structure is to bring into the facility the managerial efficiency of the corporate sector. Kanpur has its share of private limited companies as medical facilities. Typically, these are promoted by a family with closely held share-holdings. The common pattern appears to be either father and son partnership, or the partnership of siblings, one or two of whom are from the medical profession, the others from legal, chartered accountancy, or management background. In the survey three such facilities were covered.

Individually owned Private Nursing Homes The largest number of facilities fall into the category of private nursing homes. Typically, these are run by medically trained

couples who offer services of general physician, surgery and obstetric and gynaecology. These nursing homes vary both in size as well as type and quality of service provided.

Given below are data on the number and type of Private Health Facilities assessed by bed strength.

TABLE 4 Type and Bed Strength of Private Health Facilities Assessed

Type of facility	Total	Bed Strength				
		None/ NA	≤ 10 beds	11-30 beds	31-70 beds	> 70 beds
Private Trust /Society	4				3	1
Private Ltd Co	3				2	1
Private Nursing Home	27	3	8	13	3	
Total	34 (100%)	3 (9%)	8 (24%)	13 (37%)	8 (24%)	2 (6%)

are the larger facilities among the private hospitals and nursing homes. The majority of the private nursing homes have less than 30 beds. A large number cluster around 20-bed facility.

Staffing patterns of Private Hospitals and Nursing Homes

All the facilities assessed reported they have at least one obstetrician attached and twenty seven reported that they had a paediatrician attached. This attachment was in different forms.

Among the individually owned Private nursing Homes the staffing varied from doctors on full-time staff to doctors on call as required. The most tenuous link in with the professional was found in one facility in the outskirts of the city that reported that it would take one and a half hours for them to get the doctor. The situation at the Private facilities that are registered Societies or Pvt Ltd Companies (7 in all) is much better with all of them reporting staff available, including doctors, on the premises round the clock. In three of the seven facilities falling in these two categories, blood bank facilities are also available at night.

TABLE 5 Key Staff Availability in Private organised Facilities

	Society/Trust hospital (Total no 4)	Pvt Ltd Co (Total no 3)

Available at night	Avail- able	Avai- lable at night	Avail- able in 30 mins	Avail- able	Avail- able at night	Avail- able in 30 mins
Physician	75%	75%	75%	100%	100%	100%
Obs/Gynaecologist	100%	100%	100%	100%	33%	100%
Paediatrician	100%	100%	100%	100%	66%	100%
Anaesthetist	75%	75%	100%	66%	33%	66%
Nurse	100%	75%	50%	100%	100%	33%
Blood bank Technician	25%	25%	25%	66%	66%	66%

The staffing pattern in the private nursing home is different. More than 50% of the facilities contacted do not have nursing staff present in the facility premises but depend on nursing assistants or ward boys to take care of patients at night.

TABLE 6 Key Staff Availability in Private Nursing Homes

Key Staff	Private Nursing Homes (total no = 27)					
	Available		Available at night		Available in 30 mins	
Physician	18	66%	4	15%	16	59%
Obs/Gynaecologist	23	85%	10	37%	15	56%
Paediatrician	12	44%	3	11%	12	44%
Anaesthetist	9	33%	1	4%	15	56%
Nurse	21	78%	15	56%	13	48%
Blood bank Technician	5	19%	2	7%	4	15%

TABLE 7 Number Of Deliveries And Bed Strengths of Private Facilities

Size of Facility	Total no of facilities*	Total deliveries handled	Average per unit per year
upto 10 beds	7	428	61
11-30 beds	11	1491	135
31-70 beds	7	1265	181
71 beds and above	2	2197	1098

Cost Of Normal Deliveries and Cesarean Section in Private Facilities

The cost of normal delivery in a private facility can be as little as Rs 1000 and as high as Rs 7500. The table below shows the price range for normal delivery at private facilities frequently.

TABLE 8 Cost Of Normal Deliveries At Private Facilities

Cost of normal delivery	No of facilities offering
Rs 1000 or less	3
Rs 1001 to Rs 3000	24
Rs 3001 and above	3
Total	30

The bulk of the facilities charge around Rs 2500 which is the norm set by Kanpur Nursing Homes Association. These fees cover the doctors professional fees and the minimum staying charges in general beds. It does not include the cost of medicines.

TABLE 9 Cost of Caesarean Section at Private Facilities

Cost of Caesarean section	No of facilities offering
Rs 3000 or less	3
Rs 3001 to Rs 7500	19
Rs 7501 and above	8
Total	30

The range of cost of Caesarean Sections is much wider from Rs 2250 to Rs 12000. The larger numbers fall in a cluster around Rs 5000, which again is the Kanpur Nursing Home Association's suggested norm. All but eight of the 30 facilities covered reported that they extend some degree of concessions to the needy.

The next section looks at whether the health facilities that were enumerated as potential providers of EOC and ENC actually did so.

4.4 Health Facilities Providing EOC and ENC

Although the total of 39 facilities were visited to assess their potential to provide EOC and ENC services, many facilities did not actually report providing emergency care. Table 5 compares the number of facilities as potentially providing EOC and ENC with the number of facilities actually able to provide such services, based on the method of determining EOC and ENC status.

According to the RFA guidelines, a facility was considered to be providing Basic EOC (B-EOC) if, during the last three months, all of the following services had been provided: parenteral antibiotics, parenteral oxytocics, parenteral sedatives, manual removal of placenta, removal of retained products of conception (e.g., by D&C and

vacuum aspiration), assisted vaginal delivery (i.e., vacuum extraction or forceps) The facilities were considered to have provided Comprehensive EOC (C-EOC) if, in addition, blood transfusion and Caesarean section were provided

Similarly, a facility was considered to be providing Basic ENC (B-ENC) if the following functions had been performed in the last three months: resuscitation, prevention and treatment of hypothermia, intravenous fluids, parenteral antibiotics, oxygen, and gavage feeds (nasogastric). The facility was considered to be providing Comprehensive ENC (C-ENC) if, along with the services just listed, the facility had also provided exchange blood transfusion and Caesarean section during the last three months. Table 5 shows the health facilities by the type of EOC and ENC services provided.

TABLE 10 Health Facilities Assessed by Type of EOC and ENC Service Provided

Type of Service	Government or Public Health Facilities		Private Health Facilities		Total Actual (%)
	Potential	Actual	Potential	Actual	
NA/Unknown				2	2 (5%)
Not EOC		2		2	4 (10%)
B-EOC only	2		5	2	2 (5%)
B-ENC only					
B-EOC+B-ENC	1	1	0	1	2 (5%)
C-EOC only			6	12	12 (31%)
C-EOC +B-ENC				3	3 (8%)
C-ENC only					
C-EOC+C-ENC	2	2	23	12	14 (36%)
Total Number of Facilities	5	5	34	34	39 (100%)

As expected, the large government hospitals provide Comprehensive EOC and ENC, while only one of the three Primary Health Centres provide Basic EOC. This PHC is not in the Maitha block but on the main road in Kalyanpur block. Neither of the two PHCs in Maitha development block provide Basic ENC.

Among the private sector facilities, there is a considerable difference between the service potential based on the possibility of their providing the services compared to their actual reported services in the last three months. The data source for determining the actual vis-a-vis the potential services was based on the interviewee's report. It is important to note that, since self-report rather than actual observation or record verification was used to collect this information, it is liable to inaccuracies based on reporting by interviewee. The types of services provided varied by the type of administration of the facility. All of the Private Trust Hospitals and Company run Hospitals assessed provide Comprehensive EOC as defined. Of the 27 Individually

Owned Nursing Homes, 22% do not provide EOC, 15% offer Basic EOC and 63% provide Comprehensive EOC. Both Basic and Comprehensive ENC are, however, less likely to be provided by the private facilities. A majority of smaller private facilities do not provide any ENC at all. Only three (75%) Trust hospitals, one (33%) Company run, and 9 (33%) individually run facilities provide Comprehensive ENC, as defined.

Care for neonates are not as easy to come by. Eighteen private facilities (47%) offer Basic ENC, while 12 private facilities (35%) offer Comprehensive ENC. There are no centres that offer exclusive neonatal care only.

4.5 Types of Data Available

For the purpose of this analysis the data were reported using Plans 1, 2 and 3 separately from data that were reported using Plan 4. Table 6, below, gives these proportions.

TABLE 11 Plans Used to Collect Data by Type of Health Facility

Plan	Government/ Public Health Facilities		Private Health Facilities			Total (%)
	Hospital	PHC	Trust or Society	Ltd Compan y	Private Nursing Home	
Unwilling					2	2 (5%)
No data		3	1	1	3	8 (20%)
Plan 4			2	1	7	10 (26%)
Plan 3				1	13	14 (36%)
Plan 2	2		1			3 (8%)
Plan 1					2	2 (5%)
TOTAL	2	3	4	3	27	39 (100%)

Only about 13% of the facilities were able to give data from actual complete records. Approximately 36% were able to give data based on incomplete records and were

estimated using Plan 3, and 26% were able to guess the load and the number of deliveries, but could not support with any data

Two large government hospitals came under Plan 2, as did one of the professionally run Trust hospitals. In all three places Plan 2 was followed because the data load was high. Plan 1 was used to collect data only from two private Nursing Homes. Both reported concern about the quality of patient care and, therefore, keeping of complete records. Indeed, in both places it was found that records are meticulously maintained. There was apparent awareness that something needed to be done to reduce the number of maternal and neonatal complications seen.

4.6 Maternal Complications and Deaths

Data on maternal mortality and morbidity were available under Plans 1 and 2 from only five facilities. These facilities include the two large government hospitals which have a large proportion of the deliveries recorded. According to Plans 1 and 2, an average of 12.2% of deliveries were reported to have maternal complication. Seventy-eight maternal deaths were recorded, which amounts to 1,260 maternal deaths per 100,000 deliveries (i.e., true facility-based rate). Table 7 summarises the information available on maternal complications from all four data plans.

TABLE 12 Maternal Complications and Deaths in Private Facilities as Percentage of Total Deliveries by Plan Used to Collect the Data

Data Collection	Number of Facilities	Total Deliveries No	Maternal Complications No (%)	Maternal Deaths No (%)
Plan 1	2	136	30 (22%)	1
Plan 2	3	6,050	723 (12%)	77 (1.3%)
Plan 3	13	1,866	962 (52%)	NA
Plan 4	11	3,365	848 (25%)	1
TOTAL	29	5451	1,873 (34%)	72 (1.3%)

The proportions of maternal complications varied between 12% and 52% based on the type of data records available. On average 34% of deliveries were with maternal complications. The type of complications reported and their frequency are described later in this section.

4.7 Neonatal Complications and Deaths

Data related to neonatal complications was less likely to be available than data on maternal complications. This data was only available in one of the two public hospitals, however, data on neonatal deaths was available from both the public hospitals using Plan 2. Among the private facilities, thirteen reported data related to neonatal complications. Of these only two gave data from Plan 1, 2 and 3, the remainder gave data from Plan 4. Even the facilities that had provided data related to maternal complications and deliveries under Plan 3 resorted to estimates when it came to neonatal complications. Table 8 presents the data on neonatal complications. These proportions indicate the scarcity of information on neonatal complications.

TABLE 13 Type of Neonatal Complication by Plan Used to Collect Data

Data Collection	Total Facilities	Total Deliveries	Neonatal Complications	
			Frequency	Proportion
Plan 1	1	25	1	4%
Plan 2	2	1,580	234	15%
Plan 3	4	1,071	283	26%
Plan 4	7	2,695	84	3%

TABLE 14 Number of Neonatal Deaths Reported by Plan Used to Collect Data

Data Collection	Total Facilities	Total Deliveries	Neonatal Deaths	
			Number	Proportion/1000 Deliveries
Plan 1	1	111	3	27
Plan 2	2	5,966	66	11
Plan 3	8	1,441	114	79
Plan 4	8	2,678	2	1
TOTAL	19	10,196	118	11.6

4.8 Types of Complications

Maternal

Data for maternal complications was collected in two ways. The first was by simply abstracting the total number of cases recorded as having the seven most prominent causes of maternal deaths using the working definition of a complicated case i.e., hemorrhage, prolonged/obstructed labor, postpartum sepsis, complications of abortions, pre-eclampsia, ectopic pregnancy and ruptured uterus. The second was by asking the informant to rank order these seven complications in terms of the frequency with which they were admitted and cared for in their facility.

Since a large number of facilities did not have actual records pertaining to maternal complications, the ranking of complications must be considered as a very rough estimate. Thirty-three of the thirty-nine facilities assessed ranked the causes for maternal complications. Not all facilities, however, ranked all of the causes. Some only identified the first one or two that they could. The table below gives the distribution of ranks for each cause.

TABLE 15 Type of Maternal Complication by Order of the Frequency With Which They Were Admitted/Cared for by Facilities

Type of Maternal Complication	Number of Facilities Ranking the Complication As				Total of All Facilities
	Rank 1	Rank 2	Rank 3	Ranks 4-7	
Antepartum/Postpartum Haemorrhage	9	10	5	4	28
Prolonged/Obstructed Labour	11	11	8	Nil	30
Postpartum Sepsis	3	5	7	10	25
Complications of Abortion	7	4	3	7	21
Eclampsia/Pre-eclampsia	3	3	4	14	24
Ectopic Pregnancy	1	0	5	14	20
Ruptured Uterus	0	0	0	17	17

The total number of facilities that have ranked a particular complication may be considered in itself an indication of the rank order of importance. Based on the ranks allocated to each complication, prolonged/obstructed labour was the most frequently occurring complication, followed by haemorrhage, and the least commonly observed complications admitted and cared for in facilities were ectopic pregnancy and ruptured uterus.

In order to aggregate the ranks given to each complication by multiple facilities the frequencies were weighted by factors in the reverse rank order (Rank 1 = weightage of 4, Rank 2 = weightage of 3, Rank 3 = weightage of 2, Rank 4-7 = weightage of 1). The values thus derived are given in Table 11 below.

TABLE 16 Rank Order of Types of Maternal Complications by Weight and Percentage

Type of Maternal Complication	Weighted Ranking	Percentage
Prolonged/Obstructed Labour	93	25%
Antepartum/Postpartum Haemorrhage	84	23%

Postpartum Sepsis	51	14%
Complications of Abortion	53	14%
Eclampsia/Pre-eclampsia	43	12%
Ectopic Pregnancy	28	7%
Ruptured Uterus	17	5%
TOTAL	369	100%

Many facilities also mentioned severe anemia as an important maternal complication and, indirectly, of maternal death. The persons interviewed reported that they received a large number of pregnant women who came to the facility with haemoglobin levels as low as 2 or 3gm/dl. These pregnant women are admitted to the hospital for blood transfusion and are then sent home to complete their pregnancies to term. Pre-term labor and birth, not included in the working definition of complicated case for this assessment, was also mentioned as a reason for both maternal and neonatal complications. The rank order of maternal complications by type in Table 11 is compared with the rank order of maternal complications by type, based on actual records (Plans 1 and 2) in Table 12, below.

TABLE 17 Type of Maternal Complications Actual Frequency Compared with Ranked Order Based on Perceived Frequency

Type of Maternal Complication	Actual Frequency of Complication		Proportion Based on Rank Order
	Frequency	Proportion of All Complications	
Prolonged/Obstructed Labour	429	56%	25%
Antepartum/Postpartum Haemorrhage	173	22%	23%
Postpartum Sepsis	15	2%	14%
Complications of Abortion	26	3%	14%
Eclampsia/Pre-eclampsia	87	11%	12%
Ectopic Pregnancy	7	1%	7%
Ruptured Uterus	35	5%	5%
TOTAL	772	100%	100%

The comparison of actual frequency of complications by type with the proportion arrived at from ranking based on the respondent's knowledge correspond closely with one another and suggest that prolonged/obstructed labour, followed by haemorrhage are the most frequently seen maternal complications

Neonatal Complications

Neonatal complications were abstracted from records as well as ranked using the same methodology as followed to identify the major causes of maternal complications

Table 18 Reasons For Neonatal Complications Ranked Value

Neonatal Complication	Frequency of facilities that ranked as				Total No of Facilities
	Rank 1	Rank 2	Rank 3	Rank 4-5	
Birth wt < 1800 gms	10	6	4	2	22
Birth trauma	2	1	2	10	15
Asphyxia	7	3	21	2	23
Hypothermia	2	3	3	7	15
Infection/ septicimia	6	8	4	3	21

Twenty-four of the 39 facilities visited ranked neonatal complications in terms of the frequency with which they are admitted and cared for in the facility. Not all the 28 facilities ranked all of the causes as can be seen from the last column of table 4.4a. A weighted frequency was used to arrive at an aggregate rank order in order to determine the complication seen most frequently. The analysis follows the methodology used for aggregating the rank order of maternal complications.

TABLE 19 Weighted Frequency And Percentage Value Of Neonatal Complications As Derived From The Rankings

Neonatal Complication	Weighted Ranking of Complications	Percentage
Burth weight <1800 gms	32	17
Birth trauma	25	13
Asphyxia	53	27
Hypothermia	30	16
Infection/ septicimia	50	27
TOTAL	190	100

(To get a single value for each complication the frequencies have been weighted by factors in the reverse order (rank 1 = weightage of 4, rank 2 weightage of 3, rank 3=weightage of 2 and rank 4-7 = weightage of 1)

Based on the data in Table 4.4b, asphyxia and septicimia are the most prevalent neonatal complications for which neonates are admitted at the facilities. It should be noted that the data presented above includes facilities where no records were present and the provider used estimates and their own perceptions to arrive at the rank order. An attempt was made to check the validity of the rank order against data gathered from actual records in four facilities under plans 1 and 2.

The wide discrepancy between the actual incidence from records and frequency based on rank order suggests that data on neonatal complications is not reliable and should only be interpreted as such.

5.0 Identification of a facility as a training resource.

The choice of training facility would depend on four primary criteria

- Adequate patient load (at least 20 deliveries a month)
- Provided comprehensive emergency obstetric care,
- Is adequately equipped and
- Is willing to train homebased birth attendants

Applying the first two criteria we find there are 2 public hospitals and 5 private hospitals that qualify for further probe. The second and the third criteria require further more focussed interviews.

6.0 Conclusion

The referral facility assessment highlights of the types of facilities the selected community can access.

The number of referral facilities within the city limits of Kanpur is large. The community usually come to the city for emergency care. Though the city is about 25kms away, options for transportation and care are more in the city than in the rurally based facilities.

The govt facilities are well known and well attended as can be seen from the patient load. There is one religious based hospital in the city of comparable to the public facilities both in term of size and patient load.

Though the facilities in terms of numbers are high the types of emergencies being handled by these facilities could not be assessed on account of poor record maintenance in the private facilities.

The govt facilities offer institution based care for no charge. Some private facilities also offer services at reasonable cost and are willing to provide concessions for the needy. Sophisticated super specialities can also be accessed for a price.

A large number of doctors met for the purpose of this assessment had not earlier given thought to the larger issues of maternal mortality and morbidity. They did express their willingness to collaborate in any effort to improve the currently prevalent conditions.

There are facilities that have been identified that have the potential for being a training resource to the 'Community Partnership in Safe Motherhood project'. These need to further investigated.

7.0 Recommendations

Since Kanpur has a large community of medical professionals it is recommended that

the findings from this report is shared with them through formal channels both government and voluntary. It is necessary to understand the need for good records to approach any problem at a macro level. The cities medical professionals need to partner in this effort.

There is a need to further investigate the five facilities which show promise as training resource for the community.

Reference

United Nations Children's Fund 1997 **Guidelines for Monitoring the Availability and Use of Obstetric Services**

International Institute for Population Services (IIPS) 1995 **National Family Health Survey 1992-93** Bombay, India

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