NEEDS ASSESSMENT STUDY FOR EMERGENCY OBSTETRIC CARE SERVICES IN GOALPARA, DHUBRI AND BARPETA DISTRICTS OF ASSAM

By

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Executive Summary

A survey report on "Needs Assessment of Emergency Obstetric Care in 3 districts of Assam" has been prepared in response to UNICEF's plan of monitoring the processes or interventions aimed at reducing maternal mortality.

While the primary responsibility for monitoring progress towards the goal of reduction of maternal mortality lies with the government of each country, United Nations Agencies, in co-operation with other national and international organisations, have a critical role to play in supporting countries in this process.

In 1987 Safe Motherhood Conference in Nairobi first formulated the goal of reduction of maternal mortality by half between 1990 and the year 2000. This goal was re-emphasised at the 1994 International Conference on Population and Development in Cairo and 1995 Fourth World Conference on Women in Beijing.

One of the critical pathways to reduce maternal mortality is improving the accessibility, utilisation and quality of services for the treatment of complications during pregnancy and childbirth. Evidence shows that atleast 15% of all pregnant women develop sudden serious complications and require life saving access to quality obstetric services.

This report prepared for the period January 2001 to December 2001 in the three districts of Assam namely Goalpara, Dhubri and Barpeta will give an insight into the status of emergency obstetric care in selected health institutions of the districts in Assam.

The main objectives of this study was to assess the functioning of emergency obstetric care services in three district hospitals and one CHC each of Goalpara, Dhubri and Barpeta district of Assam. To assess the needs regarding facilities equipment, drug and human resources. The pattern of obstetric admissions including complicated cases and maternal deaths in these institutions in the preceding year.

Of the six health institutions surveyed the three district / civil hospitals were found to be all having the eight "signal functions" to be categorised as Comprehensive EmOC. Of the three CHCs, Chapar and Pathsala were by status determination were only basic EmOC, since there was no caesarean sections and blood transfusion services. Rongjuli CHC was not even basic EmOC as three signal functions including C-sections and blood transfusion services were not available.

Among the complicated case admissions fatality was highest in eclampsia / preeclampsia cases. CFR was also high in ruptured uterus, haemorrhage and other obstetric causes. Only in induced / septic abortion, case fatality rate recorded was less than one percent. Linen was found in short supply in all the health facilities, so also basic equipments like sphygmomanometer, stethoscope, ultrasonic fetal monitor, thermometers and urinary catheters. Residences were not available for all doctors and staff in / near the hospital premises.

Since record keeping was very poor in all the health institutions it is recommended that the staff be trained and workshops held for proper and scientific record maintenance.

Eclampsia room should be done away with as they are usually neglected. Rather an "Eclampsia Corner" in the general ward be started for proper care and adequate attention of the eclampsia cases.

Proper waste management training and provision of incinerators in all the hospitals highly recommended. There is lack of bio-safety measures for lack of which necessary equipments, linen and bio-safety awareness training should be given to the hospital staff.

If all the lacunae found in the sample survey study is filled up, the six health institutions surveyed can be made to provide comprehensive EmOC for maximum utilisation.

Sharing of this partial survey data at national and international levels will definitely go a long way to help the governments and international agencies to plan for future programmes for Safe Motherhood.

NEEDS ASSESSMENT STUDY FOR EMERGENCY OBSTETRIC CARE SERVICES IN 3 DISTRICTS OF ASSAM

BACKGROUND OF THE STUDY

Almost 600,000 women die every year from complications of pregnancy and childbirth. For every one of these deaths, between 30 and 100 more women suffer from acute maternal morbidities that are painful, debilitating and often permanently disabling.

A women in the developing world is almost 40 times more likely to die from complications of pregnancy and childbirth than a women living in an industrial world.

While many other health indicators have dropped sharply over the last two decades, maternal mortality rates and ratios have remained stagnant. The causes are rooted in the inappropriateness of many interventions intended to improve maternal health, as well as in the powerfulness of women (UNICEF : Programming for Safe Motherhood).

Hence the rationale of this study in Assam on Needs Assessment EmOC as proposed by UNICEF, Kolkata, Safe Motherhood and Women's Health Section.

The state of Assam is situated in the North Eastern Region of India covering 78,438 sq. km land area demarcated into 24 districts. It has a population of 2,66,38,407 (2001 census of India).

Barpeta, Dhubri and Goalpara are three border districts of Assam lying on the western range of the State. Barpeta shares a border with Bhutan, Dhubri with Bangladesh and Goalpara with the neighbouring State of Meghalaya. Per capita net domestic product of the State is only Rs. 518.9 (*Directorate of Economics & Statistics, Assam*). Infant mortality rate in Assam is estimated at 75/1000 live births when all India average is 70/1000. Birth rate is 29.3 and death rate is 9.4(Source : *Sample Registration Bulletin, R.G.I., Jan 1998*).

The total population of Dhubri district is 1,634,589 of which rural population is 1,444,043 and urban population is 190,546. The total population of Goalpara District is 822,306 of which rural population is 755,017 and urban population is 67,289. The total population of Borpeta District is 1,642,420 of which rural population is 1,517,280 and urban population is 125,140 (Source: Population census 2001)

One of the important objectives of the National Family Welfare Programme is to reduce the maternal mortality. The causes of maternal death rate are the same for women everywhere but the particular vulnerability of the women in the world's poorest nations is directly related to the non-fulfilment of several key human rights and lack of accessible and functioning Emergency Obstetric Care Services (EmOC).



Map of Assam showing the districts of Goalpara, Dhubri and Barpeta Assam's high IMR and India's Maternal Mortality Ratio of 437 deaths / 100000 live births definitely points to deficiencies in availability, accessibility and poor utilisation of services.

A health centre that provides basic EmOC can prevent many maternal deaths. Obstetric complications cannot really be predicted but can be managed effectively, saving many lives if quality EmOC is available. For some conditions like post partum haemorrhage EmOC services would be sufficient but for other complications like obstructed labour, more complicated treatment is required such as Comprehensive EmOC which includes caesarean sections and blood transfusion services. Even with EmOC, and first aid, lives can be saved because the woman's condition can be stabilized before she is referred.

The term Emergency Obstetric Care (EmOC) covers some "signal functions" with which to measure the care provided for obstetric complications in a given setting. The short list of services that can save the lives of the majority of women with obstetric complications are at two levels of care as defined by : (1) Basic EmOC and (2) Comprehensive EmOC. The main difference in these two is the provision of caesarean sections and blood transfusions in Comprehensive EmOC. A list of eight "signal functions" have been taken up which is shown below

Were the following services performed at least once during the last 3 months?	Yes	No
(a) Parenteral antibiotics		
(b) Parenteral oxytocics		
(c) Parenteral sedatives/anticonvulsants		
(d) Manual removal of placenta	4.) 	
(e) Removal of retained products		
(f) Assisted vaginal delivery		
(g) Blood transfusion		
(h) Cesarean section		

Determination of EmOC status :

In the above table, (1) if a-h is yes, then status of health centre is Comprehensive EmOC, (2) if a-f is yes and g & h is no then status is Basic EmOC, (3) If any of a-f is no, then status of health centre is not EmOC.

OBJECTIVES OF THE STUDY

- 1. To assess the functioning of the district hospitals and Rongjuli, Pathsala and Chapor CHCs of Goalpara, Dhubri and Barpeta districts of Assam respectively, regarding provision of emergency obstetric care services.
- 2. To find out the pattern of obstetric admissions including complicated cases and maternal deaths in these institutions last year.
- 3. To assess the need regarding infrastructure, facilities, furniture, linen, equipment, drugs and human resources required for providing obstetric care in the above mentioned institutions.
- 4. To suggest specific recommendations to make these institutions functional for providing comprehensive emergency obstetric care services.

METHODOLOGY

Three border districts of Assam, viz., Goalpara, Dhubri and Barpeta were taken as a cluster for partial survey initially for Needs Assessment Study for Emergency Obstetric Care Services (NA-EmOC). These three districts of Assam have been picked up for the survey as based on Director of Health Services, Assam's data on RCH and Safe Motherhood and also UNICEF, Kolkata's specific proposal.

In each of the three districts of Goalpara, Dhubri and Barpeta two health institutions namely District Hospital / Civil Hospital and the CHC designated and approved as FRU by the Government were taken up for the evaluation study.

Hence a total of six health facilities were studied using standardised proforma. They are

- 1. Goalpara Civil Hospital
- 2. Rongjuli CHC
- 3. Dhubri Civil Hospital
- 4. Chapor CHC
- 5. Barpeta Civil Hospital
- 6. Pathsala CHC

The above six institutions were studied in regard to obstetric and complicated admissions, infrastructure, manpower, furniture and linen, EmOC equipment, EmOC drug list, services available so as to determine whether the health facilities are giving Comprehensive EmOC or Basic EmOC or not having any EmOC services and facilities.

Collection of Data

Data was collected using pre-designed pre-tested proforma. A set of standardised Forms 1-6 were supplied by UNICEF, Kolkata to be used per set at each health institution. Hence a total of 36 forms were filled up with requisite information at the six health facilities. Computerised analysis of the data was done.



A view of patient, and alterations of Fally sub-CER



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RESULTS AND OBSERVATIONS

PERFORMANCE OF EMOC STATUS OF DISTRICT HOSPITALS AND CHCs

District Hospitals

The three District / Civil Hospitals assessed namely Goalpara Civil Hospital, Dhubri Civil Hospital and Barpeta Civil Hospital are all (having) Comprehensive EmOC services performing all the following eight signal functions in three months preceding the survey

- (a) Parenteral antibiotics
- (b) Parenteral oxytocics
- (c) Parenteral sedatives/anticonvulsants
- (d) Manual removal of placenta
- (e) Removal of retained products
- (f) Assisted vaginal delivery
- (g) Blood transfusion
- (h) Caesarean section

During the last three months these services were available for 24 hours

- (a) Always at Goalpara Civil Hospital
- (b) Most of the time at Dhubri Civil Hospital
- (c) Most of the time at Barpeta Civil Hospital

The above 8 services were performed at least once during the last three months in all the three civil hospitals.

In all the above three health institutions data was collected following review of records and interview of doctors and nursing staff, Superintendents of the respective hospitals and Joint Director of the district concerned.

Record keeping and maintenance was poor in almost all the civil hospitals and the CHCs except Dhubri Civil Hospital and Chapar CHC where record maintenance was fair. Hence most of the data collections were done relying on verbal discussions and interviews with the doctors, nursing staff, the medical superintendents of the civil hospitals and Joint Director of the respective district.

Community Health Centres (CHCs)

The EmOC status of the 3 CHCs were assessed and none had Comprehensive EmOC. Pathsala CHC and Chapar CHC's status was Basic EmOC whereas Rongjuli CHC was not EmOC. In Rongjuli CHC there was no Gynaecologist. The doctors present did not practice manual removal of placenta. Retained placenta cases were referred out to Goalpara Civil Hospital.

In all the 3 CHCs namely Rongjuli CHC, Chapar CHC and Pathsala CHC there were no blood transfusion and caesarean section services.

	Ron	gjuli	Cha	ipar	Path	sala
Were the following services performed at least once during the last 3 months?	Yes	No	Yes	No	Yes	No
(a) Parenteral antibiotics	1		1		~	
(b) Parenteral oxytocics	1		1		1	
(c) Parenteral sedatives/anticonvulsants	1		~		~	
(d) Manual removal of placenta		1	1		1	
(c) Removal of retained products	~		~		1	
(f) Assisted vaginal delivery	~		~		1	
(g) Blood transfusion		~		~		~
(h) Cesarean section		\checkmark		1		1

STATUS OF OBSTETRIC ADMISSIONS INCLUDING COMPLICATED CASES, DELIVERIES, C-SECTIONS, MATERNAL DEATHS AND CFR IN LAST ONE YEAR (JAN 2001 TO DEC 2001)

GOALPARA CIVIL HOSPITAL

	Goalpara	Dhubri	Barpeta
TOTAL OBSTETRIC ADMISSIONS	1902	3285	1155
DELIVERIES	788	2359	1113
C-SECTIONS			
Emergency	40	142	
Elective	11	26	
TOTAL C-SECTIONS	51	168	
MATERNAL DEATHS			
Haemorrhage (ante- and post-partum)	1	2	
Obstructed/prolonged labour	-	2	
Ruptured uterus	4	1	410 1
Post-partum sepsis	-	2	
Pre-eclampsia/eclampsia	11	20	
Induced/septic/ incomplete abortion	1	******	
Ectopic pregnancy	-		
Total maternal deaths due to major obstetric causes	17	27	
Other obstetrical maternal deaths	2	18	
TOTAL MATERNAL DEATHS	19	45	•
OBSTETRIC COMPLICATIONS -ADMISSIONS			
Haemorrhage (ante- and post-partum	10	26	

Obstructed/prolonged labour	37	22	3
Ruptured uterus	7	15	
Post-partum sepsis	3	2	
Pre-eclampsia/eclampsia	44	85	13
Induced/septic /incomplete abortion	151	738	18
Ectopic pregnancy	3	11	1
Total obstetric complications due to major causes	256	899	46
Referrals out due to major obstetric causes	5		27
Other obstetric complications	5	27	8
CASE FATALITY RATE (# of deaths/# of cases)			
Haemorrhage (ante- and post-partum)	10%	7.69%	
Obstructed/prolonged labour		9.09%	
Ruptured uterus	57.14%	6.67%	
Post-partum sepsis		100%	
Pre-eclampsia/eclampsia	25%	23.53%	
Induced/septic abortion	0.66%		
Ectopic pregnancy			,
Case fatality rate due to major obstetric causes	6.64%	3%	
Case fatality rate due to other obstetric causes	40%	66.67%	

In Goalpara Civil Hospital total obstetric admissions from January 2001 to December, 2001 was 1902 of which total deliveries was 788.

Total caesarean sections was 51 of which Emergency C.S. totalled 40 and Elective C.S. was 11. Hence percentage of C.S. was 6.47%.

Goalpara Civil Hospital records showed total maternal deaths for the year 2001 as 19 of which maternal deaths due to (a) Haemorrhage (ante & post partum) – 1 (b) Ruptured uterus – 4 (c) Pre-eclampsia / eclampsia – 11 (d) Induced / septic / incomplete abortion – 1 (e) Other obstetrical maternal deaths – 2.

Maternal mortality ratio in the institution was 998/lac. MMR shows very high rate as denominator was only 1902, which is the total obstetric admission. Since it is not a community based study and catchment area of the health institution is not known, it is difficult and very unreliable to calculate MMR from this data. It is to be noted that health facility data are not suitable for calculating maternal mortality rates or ratios because not all maternal deaths that occur in the population take place in health facilities. In developing countries like India the proportion of deaths that take place outside health facilities is often high, though generally unknown. Population surveys are more reliable for these calculations. The population of Goalpara district, according to 2001 census, is 822306 of which rural population is 755017 and urban population is 67289.

	Total Admn.	Death	CFR %
(a) Haemorrhage (ante & post partun	n) 10	1	10
(b) Obstructed/prolonged labour	37		
(c) Ruptured uterus	8	4	50
(d) Post partum sepsis	3		
(e) Pre-eclampsia / eclampsia	44	11	25
(f) Induced / septic / incomplete abor	rtion 151	1	0.66
(g) Ectopic pregnancy	3		
(h) Other obstetrical maternal deaths	5	2	40

Regarding admission of obstetric complications due to major causes the total for the year 2001 was 256. The break-up was as follows

CFR in haemorrhage, ruptured uterus, pre-eclampsia / eclampsia is very high per guidelines assessment where the case fatality rate among women with obstetric complications in EmOC facilities is less than 1%.

Only in case of induced / septic / incomplete abortion the CFR was 0.66% which was less than 1%.

There were no deaths reported from ectopic pregnancy, post partum sepsis and obstructed / prolonged labour.



There were no reported deaths due to obstructed / prolonged labour, post partum sepsis and ectopic pregnancy. It is seen from the pie diagram that maximum number of maternal deaths in Goalpara Civil Hospital is due to eclampsia/preeclampsia. This is mainly due to inadequate attention given to these patients as they are segregated in dark small rooms away from the general wards and the nurses station. Next common cause of maternal deaths is ruptured uterus. These are usually cases who come without ante-natal check-ups at the last moment to the hospital with severe complications. When immediate intervention is not done, usually the cases end up with ruptured uterus.



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View of the Labour Room at Barpeta Civil Hospital



Dark and dingy Eclampsia Room in Dhubri Civil Hospital



The Medical Records Room in Dhubri Civil Hospital

DHUBRI CIVIL HOSPITAL

Total obstetric admissions for the year January 2001 to December 2001 was 3285 of which total deliveries for the year was 2359.

Total C-Sections was 168 of which 142 were Emergency C.S. while 26 were Elective. Hence the percentage of C-Section in the institution for the year 2001 was 7.12%.

Total maternal deaths due to major obstetric causes is 27 and due to other obstetrical causes is 18. Hence we have total maternal deaths of 45. Other obstetrical maternal deaths include

- Retained placenta
- Pregnancy with Malaena
- Pregnancy with Anaemia
- Pregnancy with PUO
- Amniotic fluid embolism
- Pregnancy with intestinal obstruction.

In Dhubri Civil Hospital we have 899 total obstetric complications due to major causes and 27 due to other obstetric complications. The break-up of the major obstetric complication and the case fatality rate (CFR) are as follows

	Total Admn.	Death	CFR %
(a) Haemorrhage (ante & post partum)	26	2	7.69
(b) Obstructed/prolonged labour	22	2	9.09
(c) Ruptured uterus	15	1	6.67
(d) Post partum sepsis	2	2	100
(e) Pre-eclampsia / eclampsia	85	20	23.53
(f) Induced / septic / incomplete abortion	738		
(g) Ectopic pregnancy	11		
(h) Other obstetrical maternal deaths	27	18	66.67

In comparison to Goalpara Civil Hospital and Barpeta Civil Hospital, where record keeping in very poor, Dhubri Civil Hospital has fair records. CFR is showing very high percentage in all the categories because only the very serious cases are brought to the health institution in these rural areas. Hence, compared to total admission the death rate is very high. Hence, CFR is also high. It is seen from the above that CFR % for eclampsia / pre-eclampsia is very high being 23.53. One vital observation made was that the eclampsia / pre-eclampsia cases are very neglected in most of the health facilities. These cases are segregated in small dark rooms away from the general ward. Separate Nurses' Station for these patients are usually non-existent. Often when eclampsia / pre-eclampsia patients undergo convulsions it is not noticed by the doctors and staff. Under such circumstances of negligence CFR in eclampsia / pre-eclampsia is generally very high.



The most common cause of maternal deaths at Dhubri Civil hospital is due to eclampsia/pre-eclampsia (45%). The cause again is inadequate attention and segregation of cases in separate eclampsia rooms. Next common cause of maternal death (41%) is due to other obstetrical causes. Common causes found in Dhubri Civil Hospital under this heading were retained placenta, pregnancy with Malaena, pregnancy with anaemia, pregnancy with PUO, amniotic fluid embolism and pregnancy with intestinal obstruction. There were no deaths due to induced / septic / incomplete abortion and due to ectopic pregnancy.

BARPETA CIVIL HOSPITAL

Total obstetric admissions from January, 2001 to December 2001 were 1155 of which total deliveries were 1113.

Total caesarean sections were only 22. Hence the percentage of C.S. was only 1.97%. Infrastructure and manpower was not lacking but there was lack of motivation on the part of the doctors, mainly the OBGY Specialist and Anaesthtist. C-sections were done on a regular basis at the private nursing homes at Barpeta Road which is about 18 km away from the Civil Hospital by same doctors. Doctors during interview reported that the figures of eclampsia and septic abortion are much more but proper records are not available. Maternal deaths reported are few in number but proper records are not available.

Total obstetric complications due to major causes was 46 of which the break up was as follows

(a) Haemorrhage (ante & post partum)	11
(b) Obstructed/prolonged labour	3
(c) Ruptured uterus	8
(d) Post partum sepsis	
(e) Pre-eclampsia / eclampsia	13
(f) Induced / septic / incomplete abortion	18
(g) Ectopic pregnancy	1

No records of maternal deaths in Barpeta Civil Hospital.

RONGJULI / CHAPOR / PATHSALA CHC

	Rongjuli	Chapar	Pathsala
TOTAL OBSTETRIC ADMISSIONS	96		971
DELIVERIES	96	68	915
C-SECTIONS			
Emergency			
Elective			
TOTAL C-SECTIONS			
MATERNAL DEATHS			
Haemorrhage (ante- and post-partum)			
Obstructed/prolonged labour			
Ruptured uterus		1	
Post-partum sepsis			
Pre-eclampsia/eclampsia			
Induced/septic/ incomplete abortion		1	
Ectopic pregnancy			
Total maternal deaths due to major obstetric causes		2	
Other obstetrical maternal deaths			
TOTAL MATERNAL DEATHS		2	
OBSTETRIC COMPLICATIONS -ADMISSIONS			
Haemorrhage (ante- and post-partum		7	14
Obstructed/prolonged labour		14	4
Ruptured uterus		1	
Post-partum sepsis		6	
Pre-eclampsia/eclampsia		12	5
Induced/septic /incomplete abortion		81	13
Ectopic pregnancy			
Total obstetric complications due to major causes		121	36
Referrals out due to major obstetric causes		50	48
Other obstetric complications		17	5
CASE FATALITY RATE (# of deaths/# of cases)			
Haemorrhage (ante- and post-partum)			
Obstructed/prolonged labour			
Ruptured uterus		100%	
Post-partum sepsis			
Pre-eclampsia/eclampsia			

Induced/septic abortion	1.23%	
Ectopic pregnancy		
Case fatality rate due to major obstetric causes	1.65%	
Case fatality rate due to other obstetric causes		

As regards Rongjuli CHC only total number of admissions and total deliveries were recorded from the centre which is 96 each. There was no records of maternal deaths.

In Chapor CHC the total deliveries being 68 and the total number of maternal deaths recorded is 2. Total admissions for Obstetric complications is

(a) Haemorrhage (ante & post partum)	7
(b) Obstructed/prolonged labour	14
(c) Ruptured uterus	1
(d) Post partum sepsis	6
(e) Pre-eclampsia / eclampsia	12
(f) Induced / septic / incomplete abortion	81
(g) Ectopic pregnancy	
(h) Other obstetric complications	17

Other obstetric complications include any one or more than one of the following

- IUGR + PROM

- Anaemia
- Retained placenta with Anaemia
- Post partum eclampsia
- IUD with obstructed labour

CFR in Chapor CHC being

	Total Admn.	Death	CFR %
(a) Haemorrhage (ante & post partum)	7		
(b) Obstructed/prolonged labour	14		
(c) Ruptured uterus	1	1	100
(d) Post partum sepsis	6		
(e) Pre-eclampsia / eclampsia	12		
(f) Induced / septic / incomplete abortion	81	1	1.23
(g) Ectopic pregnancy			
(h) Other obstetrical maternal deaths	17		

In Pathsala CHC total obstetric admission is 971 and total deliveries is 915. No records of C-Section and maternal deaths is available. No CFR could be calculated as no records of maternal deaths. The total admissions recorded of obstetric complications from January 2001 to December 2001 is as follows

(a) Haemorrhage (ante & post partum)	14
(b) Obstructed/prolonged labour	4
(c) Ruptured uterus	
(d) Post partum sepsis	

(e) Pre-eclampsia / eclampsia	5
(f) Induced / septic / incomplete abortion	13
(g) Ectopic pregnancy	(<u></u>)
(h) Other obstetric complications	5

ASSESSMENT OF INFRASTRUCTURE & MANPOWER RESOURCES

15

In District Civil Hospitals





Labour Room, Chapar CHC



Baby Room, Chapar CHC



Staffing pattern in the Civil Hospitals in the three district headquarters are as follows :

Goa		Ipara Dhu		ubri	Bar	Barpeta	
Staff	Posts Sanctioned	Posts Filled/ Residence	Posts Sanctioned	Posts Filled/ Residence	Posts Sanctioned	Posts Filled/ Residence	
OBGY specialist	5	5/Yes	6	6/Yes	3	3/Yes	
Surgeon	4	4/ Yes	4	4/Yes	2	2	
General Duty Doctor (MBBS)	3	3/ Yes	3	3/ Yes	19	19	
Anaesthetist	3	3/ Yes	1	1/Yes	1	1	
Blood Technician	2	2/ Yes	4	4/ Yes	2	2	
Nurses	25	25/ Yes	60	60/ Yes	32	32/ Yes	
Lab Technician	4	4			3	3	
OT Sister	4	4	3	3/ Yes	1	1	
OT Attendant	4	4	1	1/Yes	1	1	
Ambulance Driver	1	1/Yes	2	2/Yes	2	2	

Comments : Staff position is satisfactory except in Dhubri where there is no sanctioned post of Laboratory Technician. There is no resident Anaesthetist in Barpeta Civil Hospital. No resident OT Sister and OT Attendant which is

necessary for smooth functioning of Comprehensive EmOC in Goalpara and Barpeta districts. There is no accommodation for Blood Technician in Barpeta Civil Hospital. In addition to these, a post of Paediatrician may be created in all the District Hospitals.



In CHCs





Operation Theatre in Barpeta Civil Hospital



Operation Theatre, Barpeta Civil Hospital



A view of the Operation theatre in Goalpara Civil Hospital



In case of the CHCs the staffing pattern is as follows :

	Rongjuli			apor	Pathsala	
Staff	Posts Sanctioned	Posts Filled/ Residence	Posts Sanctioned	Posts Filled/ Residence	Posts Sanctioned	Posts Filled/ Residence
OBGY specialist	1	-	-	-	1	1
Surgeon	-	-	-	-	-	-
General Duty Doctor (MBBS)	5	5/ Yes	6	6	6	6
Anaesthetist	-	-	-	-	1	1
Blood Technician	-	-	1	1	-	-
Nurses	6	5/ Yes	15	15	7	7
Lab Technician	1	1/Yes	2	2	1	1
OT Sister	-	-	1	1	-	-
OT Attendant	-	-	1	1	-	-
Ambulance Driver	1	1/Yes	1	1	1	1

Comments : In Rongjuli CHC there is a sanctioned post of OBGY Specialist but the post is not filled up. There is no sanctioned post of Anaesthetist, Blood Technician and OT Attendant. In Chapor there is no sanctioned post of OBGY Specialist and Anaesthetist. In Pathsala there is no sanctioned post of Blood Technician, OT Sister and OT Attendant. Hence the deficient posts have to be sanctioned and filled up to make the health institutions a Comprehensive EmOC.



ASSESSMENT OF FURNITURE AND LINEN

In District Hospitals

Comments : Regarding Furniture and Linen Goalpara Civil Hospital had quantity available and functional of most of the items except leggings under linen for operations and linen for labour and delivery. Patient gowns were not available. In the wards food trolley for patients was not available so also pillows with waterproof covers and patient gowns, towels and cleaning cloths. All the rest items assessed were available and functional.

In Barpeta Civil Hospital under operation theatre all the items were available and functional except that the Nursing station and doctors room were both very small. The Barpeta Civil Hospital will soon be shifted to a new complex. Linen for labour/delivery room were all not available. Linen was always in short supply and the patients were asked to buy the necessary linen. In the wards the items not available were benches for relatives, patient gowns, towels, cleaning cloths. The mattresses and pillows although available were without waterproof covers.

In Dhubri Civil Hospital all items were available and functional in the operation theatre. Most of the linen for operations were not available. Only items available were gowns, glove covers and laparotomy / other sponges. Under linen for labour / delivery items not available were drapes, half sheets, pack/instrument wrappers, glove covers, cloth to clean and wrap neonate,. Disposable gloves were commonly used. There were aprons for doctors but not for nursing staff. Bed sheets, patient gowns and towels were not available. In the wards, items not available were wheel chairs, patient gowns, cleaning cloths. Mattresses and bed sheets although available were in short supply.





View of the Minor Operation Theatre at Dhubri Civil Hospital



A view of the proposed Operation Theatre in Pathsala CHC



Labour Room, Pathsala CHC



Labour / Deliverv Room. Dhubri Civil Hospital



Labour Room, Goalpara Civil Hospital

In CHCs



Comments : In the Rongjuli CHC, OT has not been constructed, so all the items for operation theatre and linen for operations were not available. Under labour/delivery head items available were delivery table with stirrups, revolving stool, cloth to clean and wrap neonate, rubber sheets, sterile sanitary pads, bed sheets, blanket for mother and baby. Standing spotlight was available but not functional. Rest of the items were not available. In the wards there were 20 beds and most of the furniture were available except patient food trolley, benches for relatives, patient trolley, wheel chairs, stretchers, pillow cases, patient gowns and towels.

In Chapor CHC most of the items under the heading operation theatre were available but not functional. Only the table and chairs in the nursing station and doctors room were available and functional. Under heading linen for operations, no items were available. In the labour / delivery room, only items available and functional were one delivery table with stirrups, two standing spotlights and two revolving stools. One brand new delivery table with stirrups was in the store. No linen for labour / delivery was available. In the ward there were 11 beds. Only items available and functional were stretchers, table and chairs for nursing station and doctors room and medicine cupboards. Rest none of the items were available.

In Pathsala CHC only items available under heading of operation theatre were instrument trolley and revolving stool. Operating table with stirrups and standing spotlights were available but not functional. No linen for operations were available. Under heading of labour / delivery items available were delivery table with stirrups, standing spotlight, revolving stool. Items available under heading of linen for labour / delivery were drapes, half sheets, sterile sanitary pads, bed sheets, blanket for mother. In the wards there were 10 beds and items available

were stretchers, table and chairs for doctors and nursing station, medicine cupboards, mattresses and pillows without waterproof covers, bed sheets and pillow cases. Patient food trolley and patient trolley were available but not functional.

ASSESSMENT OF EmOC Equipment

IN DISTRICT HOSPITALS

Goalpara Civil Hospital

		Available/ Functional	Available/Non -functional	Not Available
(a)	Basic Equipment	23		
(b)	Delivery Pack	9		
(C)	Perineal /Vaginal /Cervical Repair Pack	9		
(d)	Eqpt. for Vacuum Extraction or Forceps Delivery	3	1	
(e)	Obstetric Laparotomy/Caesarean Section Pack	27		
(f)	Equipment for Craniotomy	6		
(g)	Neonatal Resuscitation Pack	11		
(h)	Basic Equipment for Uterine Evacuation	8		
(i)	Manual vacuum aspiration	3		2
(j)	Electrical Suction apparatus	1		
(k)	Anaesthesia Equipment	14		
(1)	Ultrasonic fetal monitor	1		
(m)	Essential Materials for the Provision	26		1
1	of Donor Blood for Transfusion			
(n)	Side Laboratory	21		26



Comments : In **Goalpara Civil Hospital** under heading Basic Equipment all the equipments listed are available and functional. Under delivery pack all the equipments listed are available and functional. Total number of delivery packs available was two. Under the heading perineal / vaginal / cervical repair pack all the equipments are available. It is to be noted that vaginal speculum (Hamilton Bailey) is not used nowadays but Sim's Vaginal Speculum double bladed is

available and functional. Under equipment for vacuum extraction or forceps delivery, except vacuum extractor all are available. Under heading of obstetric laparotomy all the equipments are available. All the equipments for craniotomy, neonatal resusctation pack and basic equipment for uterine evacuation are all available and functional. Under the heading manual vacuum aspiration silicone lubricant, metal canula are not available. Under the heading of electrical suction apparatus all the equipments are available and functional. Ultrasonic fetal monitor is available and functional. Under essential materials for donor blood for transfusion all materials are available except 20% bovine albumin for cross matching. In the side laboratory the available items are microscope, immersion oil, glass rods, measuring cylinder (50ml), interval time clock and methanol. Under the subhead thick blood films for malaria parasites both items are available. Under the subhead total and differential WBC count, all items are available. Under the subhead Estimation of haemoglobin, hydrochloric acid solution is not available. Under the subhead Erythrocyte volume fraction (Haematocrit) except microhaematocrit centrifuge, the other items are not available. Under the subhead detection of glucose in urine, Benedict solution, pipette, test tube holder and spirit lamp is available and functional. Under the subhead detection of ketones in urine, dropping pipette and glacial acetic acid is available. Under the subheads detection of protein in urine, detection of bile pigments in urine and detection of urobilinogen in urine, the items listed are not available.

		Available/ Functional	Available/Non -functional	Not Available
(a)	Basic Equipment	15	1	7
(b)	Delivery Pack	6(2 PACK	s) -	2
(c)	Perineal /Vaginal /Cervical Repair Pack	FILPACK		1
(d)	Eqpt. for Vacuum Extraction or Forceps Delivery	1	-	3
(e)	Obstetric Laparotomy/Caesarean Section Pack	24(IPACK	-	-
(f)	Equipment for Craniotomy	6	-	-
(g)	Neonatal Resuscitation Pack	7	-	4
(h)	Basic Equipment for Uterine Evacuation	8	-	
(i)	Manual vacuum aspiration	2	-	3
(j)	Electrical Suction apparatus	Ĩ	-	. 1
(k)	Anaesthesia Equipment	10	-	3
(1)	Ultrasonic fetal monitor	-	-	1
(m)	Essential Materials for the Provision	16		1
	of Donor Blood for Transfusion	16		4
(n)	Side Laboratory	21	-	26

Dhubri Civil Hospital



Laboratory, Pathsala CHC



A view of the Laboratory, Dhubri Civil Hospital



Blood Bank, Dhubri Civil Hospital



In Dhubri Civil Hospital under heading Basic Equipment the equipments listed not available are Stethoscope, clinical oral thermometer, low reading thermometer, surgeon's hand brush, adult ventilator bag and mask, mouth gag and sharps disposal containers. The item which is available and not functional is Instrument sterilizer, rest of the items are available and functional. Under delivery pack all the equipments listed are available and functional. Total number of delivery packs available was two. Under the heading perineal / vaginal / cervical repair pack all the equipments are available. It is to be noted that vaginal speculum (Hamilton Bailey) is not used nowadays but Sim's Vaginal Speculum is available and functional. Under equipment for vacuum extraction or forceps delivery, except obstetric forceps, outlet all items are unavailable. Under heading of obstetric laparotomy all the equipments are available. All the equipments for craniotomy, all items are available and functional except for infant laryngoscope with spare bulb and batteries, endotracheal tubes 3.5 and 3.0. Under the heading basic equipment for uterine evacuation all items are available and functional. Under the heading manual vacuum aspiration silicone lubricant, adapters and metal cannulae are not available. Under the heading of electrical suction apparatus all the equipments are available and functional except the endotracheal tubes with cuffs (8 and 10mm) and endotracheal tube connectors 15mm plastic. Ultrasonic fetal monitor is not available. Under essential materials for donor blood for transfusion all materials are available except microscope illuminator and pipettes of 1, 10 and 20ml. In the side laboratory the available items are microscope, immersion oil, glass rods, rack for drying slides, Leishman stain. Under the subhead thick blood films for malaria parasites field stain A and B is available. Under the subhead total and differential WBC count, all items are available. Under the subhead estimation of haemoglobin, both items are available. Under the subhead Erythrocyte volume fraction (Haematocrit) all the items are not available and investigations not done. Under the subhead detection of glucose in urine, all items are available and functional except indicator papers and tablets and beaker 50ml. Under the subhead detection of ketones in urine, all items are not available. Under the subheads detection of protein in urine, only indicatyor papers and tablets are not available. Under the subhead detection of bile pigments in urine and detection of urobilinogen in urine, the items listed are not available.

Barpeta Civil Hospital

		Available/	Available/Non	Not Available
		Functional	-functional	
(a)	Basic Equipment	15	-	8
(b)	Delivery Pack	8(2PAC	ks) -	-
(c)	Perineal /Vaginal /Cervical Repair Pack	8	-	
(d)	Eqpt. for Vacuum Extraction or Forceps Delivery	2		1
(e)	Obstetric Laparotomy/Caesarean Section Pack	24	-	2
(f)	Equipment for Craniotomy	-	-	6
(g)	Neonatal Resuscitation Pack	4	2	4
(h)	Basic Equipment for Uterine Evacuation	8	-	-
(i)	Manual vacuum aspiration	2	-	C.
(j)	Electrical Suction apparatus		-	-
(k)	Anaesthesia Equipment	13	-	-
(1)	Ultrasonic fetal monitor	-	-	1
(m)	Essential Materials for the Provision			
	of Donor Blood for Transfusion	28	-	-
(n)	Side Laboratory	18	-	29



In **Barpeta Civil Hospital** under heading Basic Equipment the equipments listed are available except Sphygmomanometer (doctor use their own personal instruments). Also not available are low reading thermometers, surgeons hand brush, heat source, syringes and needles, adult ventilator bag and musk, mouth gag and sharps disposal containers. Under delivery pack all the equipments listed are available and functional. Total number of delivery packs available was two. Under the heading perineal / vaginal / cervical repair pack all the equipments are available. Under equipment for vacuum extraction or forceps delivery, except vacuum extractor and obstetric forceps mid cavity all items are available and functional. Under heading of obstetric laparotomy all the equipments are available except intestinal clamps curved and straight. Equipments for craniotomy is not available. Under neonatal resuscitation pack suction catheter Ch 12 is

available and not functional. Suction catheter Ch 10, infant laryngoscope and endotracheal tubes 3.5 and 3.0m is not available. Under the heading basic equipment for uterine evacuation all items are available and functional. Under the heading manual vacuum aspiration silicone lubricant, adapters and metal cannulae are not available. Under the heading of electrical suction apparatus all the equipments are available and functional. Ultrasonic fetal monitor is not available. Under essential materials for donor blood for transfusion all materials are available. In the side laboratory the available items are microscope, immersion oil, glass rods, rack for drying slides, Leishman stain, methanol and refrigerator. Under the subhead thick blood films for malaria parasites both items are available. Under the subhead total and differential WBC count, items are not available. Under the subhead estimation of haemoglobin, haemoglobinometer is available. Under the subhead Erythrocyte volume fraction (Haematocrit) only spirit lamp and ethanol is available. Under the subhead detection of glucose in urine, the items available and functional are Benedict solution, pipette, test tube holder and spirit lamp. Under the subhead detection of ketones in urine, all items are not available except glacial acetic acid. Under the subheads detection of protein in urine, all items are not available. Under the subhead detection of bile pigments in urine only measuring cylinder is available. Under the head detection of urobilinogen in urine, the items listed are not available.

IN CHCs

Rongjuli CHC

		Available/ Functional	Available/Non -functional	Not Available
(a)	Basic Equipment	9	1	12
(b)	Delivery Pack	4	-	5
(C)	Perineal /Vaginal /Cervical Repair Pack	8	-	
(d)	Eqpt. for Vacuum Extraction or Forceps Delivery	-	4	-
(e)	Obstetric Laparotomy/Caesarean Section Pack	-	-	26
(f)	Equipment for Craniotomy	-	6	-
(g)	Neonatal Resuscitation Pack	-	10	-
(h)	Basic Equipment for Uterine Evacuation	-	8	-
(i)	Manual vacuum aspiration	-	5	
(j)	Electrical Suction apparatus	-	1	-
(k)	Anaesthesia Equipment	-	10	3
(1)	Ultrasonic fetal monitor	-	-	Ī
(m)	Essential Materials for the Provision	2		17
	of Donor Blood for Transfusion	5	-	17
(n)	Side Laboratory	-	-	47



Nurses Station at Pathsala CHC



A view of the Ante Natal Ward in Pathsala CHC




By status determination Rongiuli CHC is not EmOC. Most of the basic equipments are not available except sphygmomamometer, baby weighing scale, fetel stethoscope, instrument sterilizer, kidney basins, auto destruct syringes and needles, suture needles and suture material, IV stand, surgical gloves, scissors, rubbish bins. Most of these EmOC basic equipments are not available because they have not been supplied. Delivery is conducted here and only available and functional equipments are artery forceps, cord ties, gauze swabs and episiotomy scissors. Disposable delivery kits (DDK) supplied by Assam Area Project are available and used during normal deliveries. All the equipments for perineal / vaginal / cervical repair packs are available but not functional but all the items are still unpacked and kept in the store. All items under Obstetrui laparotomy / ceasarean section pack are not available as there is no operation theatre in Rongjuli CHC. Equipments for craniotomy, neonatal recucsitation pack, basic equipment for uterine evacuation and manual vacuum aspiration are available but not functional and are lying in the store room unpacked. Electrical suction apparatus is not available. Under Anaesthesia equipments everything is available and non functional except the Boyle's apparatus, oxygen cylinders and electrically operated suction apparatus is not available. Under the heading provision of donor blood for transfusion, only available items are test tubes, slides and the compound microscope, other items are not available. Under the heading side laboratory no items are available.

Chapor CHC

		Available/ Functional	Available/Non -functional	Not Available
(a)	Basic Equipment	15	2	6
(b)	Delivery Pack	5/2 PACK	s) -	3
(C)	Perineal /Vaginal /Cervical Repair Pack	812PACK	k) -	-
(d)	Eqpt. for Vacuum Extraction or Forceps Delivery	2	2	-
(e)	Obstetric Laparotomy/Caesarean Section Pack	5	11	10
(f)	Equipment for Craniotomy	-	1	5
(g)	Neonatal Resuscitation Pack	5(IPACK)	-	5
(h)	Basic Equipment for Uterine Evacuation	5	-	3

(i) Manual vacuum aspiration	-	-	4
(j) Electrical Suction apparatus	_	_	1
(k) Anaesthesia Equipment	-	8	6
(I) Ultrasonic fetal monitor	_	-	Ĭ
(m) Essential Materials for the Provision of Donor Blood for Transfusion	-		27
(n) Side Laboratory	18		29



Chapor CHC is a functioning EmOC. Most of the basic equipments are available except stethoscope, clinical oral thermometer, surgeons hand brush, urinary catheters, mouth gag, sharps disposal containers. The doctors use their own personal stethoscopes. Patients buy the urinary catheters when necessary. The thermometers were available initially but due to breakage, replacements have to be made frequently by local purchase. Instruments for two delivery packs are available except plastic sheeting, cloth and episiotomy scissors. Doctors use their own personal epi scissors and linen are in short supply due to frequent use. Two packs of Perineal / vaginal / cervical repair packs are available. Under the head equipment for vacuum extraction or forceps delivery vacuum extractor and obstetric forceps, breech is available but not functional. Under obstetric laparotomy / caesarean section pack stainless steel instrument tray, uterine haemostasis forceps, pedicle clamps, mosquito forceps, triangular point suture needles, round bodied needles, abdominal retractor, suction nozzle, suction tube is not available. Among items available but not functional are intestinal clamps straight and curved operating scissors, surgical knife handle and blades, straight artery forceps, sponge forceps and towel clips. Under Equipment for craniotomy, cranial perforator is available but not functional, other items are not available. The number of neonatal resuscitation pack available is one. The items available and functional are mucus extractor, infant face mask, ventilatory bag, suction catheter and baby warmer with trolley. The basic equipment for uterine evacuation which are not available are sponge forceps, single tooth tenaculum forceps and long dressing forceps. Other items are available. Under the head manual vacuum aspiration all the items are not available. The electrical suction apparatus and the ultrasonic fetal monitor is also not available. Under the head anaesthesia equipments the items that are available and not functional are anaesthetic face mask, oropharyngeal airways, laryngoscopes, endotracheal tubes with cuffs, intubating forceps and Boyle's apparatus. The other items in this category is not available. Chapor CHC does not have the provision of blood storage and transfusion and investigations are done in the side laboratory where most of the reagents and instruments are available except glass rods, interval timer clock, Leishman stain, mehanol and refrigerator. Two microscopes are available and function but four are out of order. Most of the investigations are not done except detection of glucose in urine and detection of protein in urine for which instruments and reagents are available. Instead of sulpho salicylic acid, glacial acetic acid is used.

Pathsala CHC

		Available/ Functional	Available/Non -functional	Not Available
(a)	Basic Equipment	15	1	7
(b)	Delivery Pack	7(2PA	(ks) -	1
(C)	Perineal /Vaginal /Cervical Repair Pack	7	-	1
(d)	Eqpt. for Vacuum Extraction or Forceps Delivery	1	1	2
(e)	Obstetric Laparotomy/Caesarean Section Pack	18	-	8
(f)	Equipment for Craniotomy	4	-	2.
(g)	Neonatal Resuscitation Pack	2'	-	ຈິ
(h)	Basic Equipment for Uterine Evacuation	7	-	-
(i)	Manual vacuum aspiration	-	-	5
(j)	Electrical Suction apparatus	1	-	-
(k)	Anaesthesia Equipment	-	-	14
(1)	Ultrasonic fetal monitor	-	-	<u> </u>
(m)	Essential Materials for the Provision	2	-	21.
	of Donor Blood for Transfusion	5		24
(n)	Side Laboratory	12	-	35



Pathsala CHC is a functioning EmOC and most of the basic equipments are available and functional except surgeons hand brush, heat source, adult ventilator bag and mask, mouth gag and sharps disposal containers is not available. Two delivery packs are available with all the instruments except cloth. All the instruments are available for perineal repair pack except vaginal speculum, but Cusco's speculum is available. Vacuum extractor is avail but not

functional because the cap is missing. Obstetric forceps, mid cavity and breech is not available. For obstetric laparotomy all the instruments are available except stainless steel instrument tray with cover, straight pedicle clamps, triangular point suture needles, round bodied needles, abdominal retractors, curved and straight operating scissors and suction nozzle. Equipment for craniotomy are all available and functional except cranial perforator and embryotomy scissors. For neonatal resuscitation pack all the equipments are available except baby warmer with trolley and suction apparatus. Basic equipment for uterine evacuation all instruments are available and functional. Under manual vacuum aspirator no instrument is available. The electrical suction apparatus is available and functional. Since there is no operation theatre, there is no equipment for anaesthesia. Ultrasonic fetal monitor is not available. Essential materials for provision of donor blood for transfusion is not there as there is no blood bank. Only slides, binocular microscope and cotton is available for grouping and cross matching. Only investigation done in the side laboratory are thick and thin blood films for malarial parasite, detection of glucose in urine. Reagents and instruments available are microscope, immersion oil, glass rods, Field stains A & B. glass containers, spirit lamp, ethanol, Benedict solution, pipette and glacial acetic acid.



ASSESSMENT OF EmOC DRUG LIST

As seen in the bar diagram above, commonly available antibiotics are oral and injectable penicillin, metranidazole (both oral and injectable), co-trimoxazole (both tablets and suspension), norfloxacin, tinidazole, amoxicillin capsules, injectable benzly penicillin, injection oxytetracycline and nitrofurantoin oral tablets. The supply of antibiotics in Rongjuli CHC is very poor.



The common disinfectants available are iodine and surgical spirit. There was no stock of disinfectants in Rongjuli CHC, and supply was short in Pathsala CHC.



Only antifungals available were clotrimazole (vaginal) 4000 in numbers in Goalpara Civil Hospital. No antifungals were available in the other institutions surveyed.



Steroids available in the Civil hospitals and CHCs were injectable betamethasone and injectable dexamethasone. There were no steroids available in Barpeta Civil Hospital.



Drugs used in recsuscitation which were available in the institutions were injectable adrenaline, injectable aminophylline, injectable atropine sulphate. No resuscitation drugs were available in Dhubri Civil Hospital.



IV fluids available were 5% dextrose, normal saline, Ringer's lactate solution and plasma expanders. In Goalpara Civil Hospital and Rongjuli CHC there was no supply and patients were asked to buy the IV fluids from the market.



Anticonvulsants were available only in Goalpara Civil Hospital and Chapor CHC. The only anticonvulsants available was injectable diazepam. Magnesium sulphate and phenytoin were not available in any of the institutions surveyed.

Antihypertensives were not available in any of the six institutions surveyed. Patients had to buy them when necessary.



Oxytocics were not available in Dhubri Civil Hospital and Chapor CHC. The commonly available oxytocics were ergometrine (both oral and injectable), methly ergometrine (injectable) and oxytocin (injectable). Misoprostol, prostagladin F2a (injectable), prostagladin E2 and vaginal prostaglandins were not available in any of the six institutions surveyed.

RECOMMENDATIONS

GENERAL RECOMMENDATIONS

- a. Since record keeping is very poor, doctors and staff should be trained for proper record keeping. This applies for all the six health institutions assessed.
- b. Proper formats and sheets for data entry not available. Hence regular supply of registers, data entry, books with correct formats for different information is recommended.
- c. Septic OT may be set-up in the existing infrastructure with necessary renovations, additions with requisite OT table, focus light, instrument trolley, linen, drugs, revolving stool, suction machines and other paraphernalia.
- d. There is no incinerator for proper waste disposal and no bio-safety measures in all the health institutions surveyed. Hence, an incinerator is highly recommended, which is also mandatory by law. Provision of adequate autoclaves, needle cutters gloves, masks, aprons and sharps disposal containers are recommended for biosafety.
- e. Staff should be trained and workshops conducted for scientific waste management.
- f. Linen in the labour room / delivery room and in the operation theatre are in short supply. So also the instruments necessary for EmOC which are not available may be supplied along with the necessary linen and equipment.
- g. Sewage system by proper scientific methods may be constructed.
- Alternate electricity (generator) should be supplied in all the EmOC health facilities as electricity power supply is very erratic throughout the State.
- i. A post of Paediatrician is recommended along with OBGY Specialist and Anaesthetists in all the EmOC facilities.
- j. Since potable drinking water is not available, water filters preferably electrical filters with gamma radiations may be provided in all the health institutions. Water borne diseases are very high especially during the summer and rainy seasons.

SPECIFIC RECOMMENDATIONS

Goalpara Civil Hospital

- a. If the half constructed out patient department block is completed, then all the services of Comprehensive EmOC can be expanded well.
- b. Since there is no separate septic OT and Goalpara Civil Hospital caters to a very big population with referrals from the peripheral institutes, setting up of a septic OT is recommended. This can be set-up within the existing infrastructure or in the new half constructed complex.

- c. For supply of water 24 hours, more overhead storage and water pumps can be made available.
- d. Since there is a separate eclampsia room away from the nurses station, a section of the obstetric ward can be converted into an "Eclampsia Corner" with the necessary medicines, beds and oxygen cylinders and a nurses' station especially for this section.
- e. Besides a telephone which is out of order most of the time, intercom services need to be set-up as the hospital area is very extensive being single storied (Assam type).
- f. Although both X-ray machine and ultrasonography machines are available and functional, a Radiologist in the staff position is not there which is highly recommended.

Dhubri Civil Hospital

- a. The construction of the original complex for OBGY Department should be immediately completed. This will help in expansion of services.
- b. There are six OBGY Specialists but only one Anaesthetist. There should be at least three Anaesthetist in position to take the entire load of the hospital.
- Potable drinking water to be made available by supplying electrical filters.
- d. Dhubri Civil Hospital interestingly does not have a sanctioned post for a Laboratory Technician. Two posts of Lab Technicians are recommended to cater to the hospital's needs.
- e. Regular supply of adequate linen is recommended along with the equipments and drugs which are not available as per data collected.

Barpeta Civil Hospital

- a. There are no residents within / near the hospital premises except for 1 OBGY Specialist. Quarters for doctors, nurses and other health staff are not near hospital premises which is recommended.
- b. There is no Septic OT in the old hospital complex. Setting up of a Septic OT in the new complex is recommended.

Rongjuli Civil Hospital

- a. Sanctioned post of OBGY specialist to be filled up and 1 post of Anaesthetist to be sanctioned and filled up to start Basic EmOC or better still Comprehensive EmOC.
- b. A room designated as the OT is there. It needs renovation and necessary installations to convert it into a full fledged operation theatre. Then with the necessary manpower in position Rongjuli CHC can function as a Comprehensive EmOC.



Entrance to the Blood Bank at Dhubri Civil Hospital. Also seen the half constructed O & G Complex



The half done out patients department at Goalpara Civil Hospital



A view of the dilapidated walls and floor of the Labour Room, Dhubri Civil Hospital

- Blood transfusion services can be started with the appointment of a trained Blood Technician and setting up the infrastructure for storage.
- d. Since source of water and overhead tank is already there, a water pump with back up electricity (generator) will provide 24 hours running water.
- e. Ward space used for storage of beds and other furniture can be removed and utilised properly.
- f. As per discussion with the Joint Director, Health Services, district Goalpara, one OT table and one Boyle's apparatus can be provided from his jurisdiction. With other minor modifications, the operation theatre can be made functional.

Chapar CHC

a. To convert Chapar CHC which is a Basic EmOC to Comprehensive EmOC the following have to be included :

Manpower : OBGY Specialist Anaesthetist Bacdiotricion

Paediatrician

Operation theatre services can be made functional by construction of an OT or renovation and addition to the already existing room and placing requisite furniture, equipments, linen and drugs to start EmOC.

Pathsala CHC

- a. The operation theatre can be made functional by minor repairs, renovations and installations of basic equipments, furniture, linen and drugs. Manpower – One OBGY Specialist and one Anaesthetist are already posted here.
- b. Blood transfusion facilities by appointing a Blood Technician and necessary infrastructure for blood storage will make Pathsala CHC a Comprehensive EmOC.
- c. The laboratory should be upgraded with machines like centrifuge, binocular and compound microscopes, water bath etc.