Assessing the Readiness of CHCs to Deliver Emergency Obstetric Care

A study in Wardha District, Maharashtra

4 CHAPTER

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INTRODUCTION

Despite major improvements in reproductive health, millions of individuals still continue to suffer. Although the number of under-five deaths worldwide has fallen consistently — from around 13 million in 1990 to 9.2 million in 2007 — maternal deaths have remained stubbornly intractable.[1] Since 1990, the estimate of the global annual number of maternal deaths has exceeded 500,000. This estimated number of maternal deaths translates to one woman dying every minute. Overwhelming majority of these deaths (98%) occur in developing countries.[2] The UNICEF report on "The State of World Children 2009" states that in India, the maternal mortality ratio is 450 maternal deaths per 100,000 live births. One woman dies every 5 minutes from a pregnancy-related cause in the country, most of which can be prevented. States with high maternal mortality include Rajasthan, Madhya Pradesh, Jharkhand, Orissa, Uttar Pradesh and Bihar.[3]

Nearly two-thirds of the maternal deaths worldwide are due to five direct causes: haemorrhage, obstructed labour, eclampsia (pregnancy-induced hypertension), sepsis, and

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unsafe abortion. The remaining third are due to indirect causes or an existing medical condition that is worsened by pregnancy or delivery (such as malaria, anaemia, hepatitis, or increasingly, AIDS).[4] About 15 percent of all pregnancies are estimated to result in these complications.[5] Despite years of research, still there is no reliable method of predicting the vast majority of cases of haemorrhage, obstructed labour and eclampsia. While the general health status of pregnant women is important for a positive outcome of delivery, deadly complications randomly occur in all women. In spite of these, nearly all these lives could be saved if affordable, good-quality obstetric care is available at all hours.[6] For this reason, the focus for addressing maternal mortality has shifted from predicting complications during pregnancy to preparing for efficient emergency interventions. In general, emergency obstetric interventions are inexpensive and can easily be carried out by specially trained health professionals.

The World Summit for Children in 1990 introduced a target to reduce maternal mortality in developing countries by half between 1990 and 2000.[7] The target was reaffirmed at the International Conference on Population and Development (ICPD) in Cairo in 1994 and again in 1995, at the Fourth World Summit on Women in Beijing. The fifth Millennium Development Goal set for 2015 aims to improve maternal health through a reduction of the maternal mortality ratio by three quarters.

The Context

The Safe Motherhood Programme of India, launched in 1987, emphasized the importance of access to emergency obstetric care (EmOC). Over the past decade, national plans and programmes in India have stressed the need for universal screening for high-risk pregnancies and for operationalizing essential and emergency obstetric care. In continua-

tion with the earlier efforts to improve maternal healthcare, NRHM proposes strengthening the CHCs and PHCs to make emergency obstetric and newborn care available to all women in its efforts to reduce maternal and child mortality. The JSY scheme also has provision of hiring private specialists by public healthcare facilities in case of complicated deliveries, for which monetary assistance is given by the government to the public healthcare system.

In spite of programmatic promises to reduce maternal mortality, India has a high rate of maternal mortality, as stated earlier, with wide inter-state and intra-state variations. For instance, Maharashtra has a state maternal mortality ratio (MMR) of 149 per 100,000 live births, while in Wardha district of Maharashtra, the MMR is as high as 450 per 100,000 live births; (i.e., three times higher than the state average). This is despite the fact that Wardha has high antenatal care registration of more than 85 percent, comparatively well-developed primary healthcare infrastructure and a fair percentage of professionally monitored deliveries; yet there has not been any substantial improvement in maternal mortality reduction. Therefore, a need was felt to have a deeper enquiry into the accessibility and quality of emergency obstetric services in India. Thus, the rapid assessment study was planned to find out the readiness of CHCs for providing EmOC services in Wardha district of Maharashtra.

Wardha district is located in the north-eastern part of the state. It has eight blocks (Wardha, Deoli, Seloo, Hinganghat, Ashti, Arvi, Karanja and Samudrapur). As per the 2001 census, the total population of the Wardha district is around 1.2 million. Majority (74%) of the population of the district resides in rural areas. The population of Scheduled Castes and Scheduled Tribes is around 12.83 percent and 12.49 percent of total population respectively. The birth rate of Wardha district is 16.7 per 1,000, whereas the infant mortality rate is 35.8 per 1,000 live births. ANC coverage in the district is just

15 percent. Sixty four percent of the deliveries take place in institutions.[8]

With regard to infrastructure, Wardha district has 27 primary health centres and 180 sub-centres, eight rural hospitals/sub-district hospitals/CHCs, a district hospital, a tuberculosis hospital, 21 ayurvedic clinics and 21 allopathic clinics. Nine hundred and eleven hospital beds are available in the government setup in the district. Wardha district has two medical colleges, both private with attached tertiary care hospitals. With regards to other private healthcare facilities, the district has 18 maternity homes, two major private hospitals and 48 clinics.

THE OBJECTIVES

1. To assess the readiness of two CHCs in Wardha district of Maharashtra for providing EmOC services with reference to the Indian Public Health Standards (IPHS) developed within the NRHM.
2. To understand and study the current utilization and referral pattern of EmOC at these two CHCs in the district.
3. To identify the "barriers," and "facilitators" for providing EmOC at these two CHCs from both, user as well as provider perspectives.

METHODOLOGY

Study Design

This was a cross-sectional qualitative study. Socio-demographically, all the eight blocks of Wardha district are comparable. Therefore, considering the time available for the rapid assessment, it was decided to select two CHCs (CHC-1 is Arvi and CHC-2 is Hinganghat) for the assessment of EmOC.

The following stakeholders were identified and were contacted for participation in the study:

- Civil Surgeon and Medical Superintendent/In-charge of CHC or doctors at CHC — to assess the readiness of CHC for EmOC and secondary data review.
- Nurses/Documentation officer/clerk — for abstracting secondary data.
- Private Providers — to find out barriers and facilitators for EmOC at CHC from private providers' perspective.

Total ten women (5 from each CHC area) who had availed the EmOC in the last six months were identified, to study the barriers and facilitators for accessing EmOC, and to study the pattern of EmOC utilization. The women were identified through PHN/ANM/AWW.

Data Collection

Data was collected using qualitative techniques: Checklist for facility observation and secondary data with scoring; guides for interview and guide for FGDs. All the study instruments (guide for key informant interview and focus group discussions, observation checklist) were finalized in the protocol finalization workshop. The suggestions of public health specialists, consultants, and district health officials were incorporated in data collection instruments. Finally, the instruments were pilot tested and appropriate changes were made and then finalized for data collection. The research protocol, including all the interview schedules, was submitted to Institutional Ethical Committee for approval.

The matrix (Table 1) shows the source of information with sample to study the range of issues (specified objectives) related to EmOC services.

Data was collected by a team of two principal investigators and two research associates. Interviews of health providers were conducted at health facility. Private health providers were interviewed at their clinics, whereas local

Table 1: Sources of information

Issues / Objectives	Interviews	Observation	FGDs	Secondary data
EmOC facilities at CHC as per the IPHS	• Civil Surgeon • CHC MO	CHC		Review of district/CHC MIS
Facilitators/ barriers for providing EmOC	• Civil Surgeon • CHC MO • Private provider			
Facilitators & barriers for accessing EmOC	• Women (selected from CHC record) • Local leader		Women	
Pattern of EmOC utilization	Women (selected randomly from CHC record) Health provider			Review of MIS & CHC records

leaders and women were interviewed at their homes. An anganwadi worker (AWW) from the respective villages assisted the Research Assistants for locating the homes of the selected mothers. Prior to interview, participants were fully explained the purpose of study and informed consent was taken.

Interviews of healthcare providers were conducted by principal investigators. Research associates conducted interviews of mothers and FGDs. Mothers' interviews and FGDs were conducted in Marathi. Observation of CHC and secondary data review using checklist was done by both principal investigators and research associates together.

Data Analysis

A scoring system was developed to assess the readiness of the CHCs for providing EmOC. Indian Public Health Standards for providing EmOC at CHCs as prescribed under National Rural Health Mission were considered while preparing scoring system but equal importance was also given to the local perspectives/situations in scoring. The

method for scoring was vetted by a group of five experts that included a public health expert, an obstetrician, an epidemiologist, and a programme officer at the district level, and the technical advisory group of RAHP and was finalized in the protocol finalization workshop.

The maximum possible score was 52. Emergency service available, human resource, training, EmOC equipment and drugs, infrastructures and transport facility for comprehensive EmOC services were considered for scoring. The components under each category were assigned a specific score. Details of components under each category are listed in Annexure 1. The actual score was converted into percentage score for comparison. Table 2 gives the conversion of actual score obtained into percentages. Based on the score obtained, the CHCs were assigned to specific categories and were given colour coding[9] based on the percentage of scores obtained.

Qualitative/non-numerical data was transformed and coded for analysis. All the schedules were thoroughly reviewed by both the senior investigators. Free-listing of

Table 2: Allocation of score and its categorization

Subcategory	Maximum score	< 50 %	51 to 75 %	76 to 90 %	>90 %
Emergency Service Availability	5	< 2.5	2.6 to 3.75	3.76 to 4.25	>4.26
Human power	15	< 7.5	7.6 to 11.25	11.26 to 13.5	>13.6
Training	4	< 2	2.1 to 3.0	3.1 to 3.6	>3.7
Equipment	6	< 3	3.1 to 4.5	4.5 to 5.4	>5.5
Drugs	8	< 4	4.1 to 6.0	6 to 7.2	>7.3
Infrastructure	10	< 5	5.1 to 7.5	7.6 to 9.0	>9.1
Transport	4	< 2	2.1 to 3.0	3.1 to 3.6	>3.7
Total	52	< 26	26.1 to 39	39.1 to 46.8	>46.9

Note:
Less than 50 % of maximum score => Poor Services
Between 51 to 75 % of maximum score => Needs considerable improvement
Between 76 to 90 % of maximum score => Satisfactory but there is scope for improvement
More than 91 % of maximum score => Good/excellent services

themes/concepts expressed was done and important thematic domains were identified. Responses with almost similar connotations were grouped together. Triangulation of qualitative data, data from observation checklists and secondary data from the two CHCs and from the district was done. In the final report, responses were organized and grouped as per the issues that were to be addressed. Comments from the respondents that are appropriate, important and illustrative have been used verbatim throughout the report wherever necessary, after analyzing them.

Limitations

To study the pattern of EmOC service utilization, the study randomly picked 10 cases from records, but it was revealed later from the interview of the staff nurse of a CHC that sometimes the emergencies that arrived in the CHC were directly referred to the higher facility without entering in CHC records. As five cases were randomly picked from the record to retrospectively track, the study might have missed some important cases that would have provided some additional insights. Other limitations could be due to the methodology used in the study. This being a rapid assessment study conducted in two blocks of the Wardha district using mainly qualitative methods, the findings may not be generalized to other regions of the state.

FINDINGS

Location of CHCs

Distance and time taken for reaching the health facility from patients' homes during emergency is an important determinant for utilization of that facility. The study found that both the CHCs were well-connected by road and there was adequate availability of public transportation in the

town where the CHCs are located. Most of the patients received by the CHCs were from nearby villages and towns. FGDs and in-depth interviews of mothers revealed that the average distance of CHC from their home was approximately 20 km. The main mode of transport from nearby villages during an emergency was by auto-rickshaw and the amount of money spent by the family on transportation ranged between Rs.50 to 400 (charges are higher during night). The average time taken by women to reach the facility by this common mode was around 2 hours. However, as the transport facilities from remote villages to the CHCs are far from adequate, CHCs are receiving very few clients from remote areas.

Readiness of CHC for Providing EmOC

Both CHCs were assessed separately to find out their readiness for providing EmOC (for details see Annexure 1). The study shows that CHC-2 (Hinganghat CHC) was performing relatively better compared to CHC-1 (Arvi CHC). However, CHC-2 was mostly providing selective services (non-emergency services) due to non-availability of the 24X7 specialist. The contractual specialist of CHC-2 has limited role in emergency, moreover, one of the contractual specialist (anaesthesiologist) was coming from a far off place (60 kms/2 hrs). CHC-1 does not have any specialist services. Thus, in absence of these specialists' services, it is difficult for these two CHCs to provide crucial services like EmOC and appropriate referrals. Physical infrastructure and equipments at both the CHCs were adequate but remained underutilized due to lack of trained personnel. Therefore, while giving score, we considered the functional status of the equipments or instruments and infrastructure. Score allotted to specific aspects/services and the percentages of score obtained by both CHCs and their interpretation is given in Table 3.

Table 3: Total Score of the Two CHCs

Item	Max score		Score obtained by CHC			
			Hinganghat		Arvi	
	Number	% Wattage	No	%	No	%
Emergency services	5	29	5	100	3	60.0
Manpower	15	19	13	86.7	9	60.0
Training	4	15	4	100	2	50.0
Equipment	6	12	4	66.7	3	50.0
Drugs	8	10	5	62.5	3	37.5
Infrastructure	10	8	10	100	6	60.0
Transport	4	8	4	100	2	50.0
Total services	52	100	45	86.5	28	53.8

Various issues related to provision of EmOC at the CHCs as evident from Table 3 are explained below:

Availability of basic and comprehensive EmOC service availability: A facility is said to be equipped to provide basic EmOC services with regard to delivery care, if it has adequate facilities for parenteral administration of antibiotics, anticonvulsants and oxytocics, assisted vaginal delivery, manual removal of placenta and removal of retained products of conception. And for a facility to qualify for provision of comprehensive EmOC, in addition to the basic EmOC requirements as described above, the facility should have provision for caesarean deliveries, blood bank and blood transfusion facilities.

The study found that Arvi CHC has inadequate functional equipment for providing EmOC. Further, the clinical staffs needed to provide comprehensive EmOC were grossly inadequate. Therefore, only normal labour was conducted (mostly by the nurse/midwife/TBAs). The Hinganghat CHC had basic EmOC facilities and limited comprehensive EmOC services. Normal or assisted deliveries, routine MTPs, elective (non emergency) caesarean section deliveries were routinely performed at Hinganghat CHC. The utilization of facility for emergency obstetric services was limited due to shortage of

blood supply and absence of anaesthetist. (Annexure 2 provides details of services available at both CHCs)

Services for neonate: Neither Neonatal Intensive Care Unit (NICU) or Premature Baby Unit (PBU) was available at either CHCs. However, radiant baby warmers (to prevent neonatal hypothermia) were available, functioning and used frequently in both the CHCs. Since hypothermia is the main cause of neonatal morbidity and mortality in this region, the study concluded that the required basic service for neonates was adequate.

Infrastructural issues: Physical infrastructure at both CHCs was adequate as per the guidelines of IPHS for providing comprehensive EmOC. (Annexure 3 provides details of the physical infrastructure available at each CHC). Labour ward was in close proximity to the labour room and OT as recommended. Both CHCs had a well-equipped labour room with all facilities including oxygen, IV lines, suction machine, emergency tray and drugs. Enough mattresses were available in labour ward at both CHCs. The study found that all the ANC/PNC wards were well ventilated.

- Operation theatre: OT was available at both CHCs, but only functional at CHC-2. OT of CHC-1 was not utilized as there were no specialists. As per the records, all the necessary OT equipments were available at both the CHCs.
- Blood bank: Blood bank infrastructure was available at both the CHCs but was functional only in CHC-2, though not 24X7. Moreover, it was reported that there was often shortage of blood at the Hinganghat CHC, and clients had to procure blood from the district hospital blood bank, or they were referred for blood transfusion to the district hospital.
- Drugs:[10] Minimum required quantities of drugs that are required for EmOC (as per the IPHS standard) were

available at CHC-2 as per the records. However, clients reported having to purchase drugs from outside. Some emergency drugs were available at CHC-1. On further enquiry, it was revealed that at both CHCs there were frequent shortages, especially for antibiotics. Women in FGDs revealed that the average cost of drugs that were prescribed for purchase from outside pharmacy was approximately Rs.1,000–2,000 at CHC-1 and Rs.500 to Rs.3,000 at CHC-2.

- Equipment: All equipments, recommended by the IPHS for EmOC were available at both the CHCs. Most of the equipments were functional at Hinganghat CHC, but at Arvi the equipments were either non-functional or not in use. Facilities for ultrasonography (USG) were not available at either CHC. Patients prescribed for USGs had to go to private facilities, which cost them around Rs.500 per USG examination. A few patients were also referred to the District Hospital for USG. Filled oxygen cylinders, functioning with appropriate valves and regulators were available at both the CHCs. (Detailed assessment of equipment is given in Annexure 4)
- Hospital waste disposal facility: Hospital waste disposal facilities (colour coded dustbins) were available at both CHCs, but segregation of waste at source was not happening. The final disposal at both CHC was done by deep burial method.
- Human resource/clinical staff: It was observed that both the CHCs were having adequate support staff for EmOC (Annexure 5 gives the details of staff available at both CHCs). However, critical clinical staff members, i.e., specialists, were found to be grossly deficient at CHC 1. At CHC-2, the most essential clinical manpower for providing EmOC, i.e., the gynaecologist/obstetrician and anaesthesiologists were available on contractual basis only. The contractual anaesthesiologist was from Wardha and

needed to travel a distance of 60 km(2 hours) to reach CHC-2. This arrangement was adequate for elective caesarean deliveries or elective operations, but was perceived as a probable barrier for accessing the emergency services. It is very difficult to predict which pregnancy will require emergency interventions.

- Cleanliness: The study found that overall cleanliness of both the health facilities needed improvement. Unclean and unhygienic environment could be the potential source of infection. This may further increase the duration of hospital stay and cost of treatment. Moreover, it could also be a barrier for accessing the services, as one mother in her interview told that the CHCs are very dirty, so they prefer not to go there, unless there in no other option available.

EmOC Utilization and Referral Pattern

To study the pattern of utilization of EmOC, the study retrospectively tracked down five cases from each CHC's catchment area who had received EmOC services and interviews of doctors. The pattern of EmOC services utilization was studied in terms of the preference or choice of facility for accessing services, facility at which EmOC services were finally availed, referral pattern, constraints/barriers for providing as well as accessing the services and direct cost for availing the EmOC.

In the absence of availability of trained staff, it was expected that the CHCs would have prompt referral services in place. The study found that both the CHCs had one ambulance for referral, but the services were available only at CHC-2. Though the ambulance was available 24×7, the charges had to be borne by the client (Rs.8 per km). Medical Officer In-Charge of CHC-1 reported that the ambulance was not in working condition and therefore clients are referred by other private vehicles. Some form of private transport facility was available at both the CHCs 24X7, though the cost was very high. People

accessing the services at CHC, being from poor socio-economic background, lacked the capacity to pay for the transport.

Arvi CHC (CHC-1)

The Arvi CHC, in spite of being equipped with good physical infrastructure for providing basic EmOC, is unable to provide EmOC (except referral services) due to lack of trained technical manpower as was revealed from the facility assessment.

Of the five cases, two cases were referred to the district hospital by the private provider. But as the family was poor and was unable to afford high cost of transport to the district hospital, both the families went to the nearest Arvi CHC. Both the women were 9-months pregnant and were in labour pains when they reached the CHC. They were kept for 6 and 8 hours respectively at the CHC. Then the medical officer at the CHC diagnosed them as cases of prolonged, possibly obstructed labour, and he also referred them to the district hospital. The MO helped the patients to arrange for the private transport on loan basis as the CHC ambulance was out of order. Both the women delivered by caesarean operation at the district hospital.

Other two cases, on their own, approached Arvi CHC, as they were poor and therefore could not afford other available private facilities. The health personnel available at the CHC then referred one of them who had a history of caesarean section to the district hospital, as trained personnel were not available to provide proper treatment. The CHC ambulance was not in working condition at the time of visit and the charges of private vehicle was very high. The woman said, "… We are from poor family; therefore we went to government hospital (CHC Arvi). But the nurse said there was no doctor and asked us to go to Wardha (district hospital). Whole day I was in pain in the Arvi hospital but they did nothing. We didn't have money, so my husband sold two goats and then he took me to Wardha hospital. We spent Rs.1,500 there for

drugs." In case of the other woman, the staff nurse of the CHC conducted the delivery but was immediately referred to the district hospital at Wardha (65 Kms away) due to severe bleeding, where she was given blood transfusion.

The fifth case was referred to the CHC from a Primary Health Centre (PHC). She was 8-months pregnant and was diagnosed as a case of multiple pregnancy by the MO at the PHC. In spite of being registered for ANC and five ANC visits at sub-centre and PHC, the patient was uninformed of multiple pregnancy. After reaching the CHC, the staff nurse referred the woman to Medical College Hospital at Wardha for future management where she delivered two low-birth-weight babies by caesarean section.

There was one private provider (obstetric consultant) in Arvi town. An in-depth interview of the private provider revealed that a majority of the pregnant women from nearby area came to this consultant for delivery. The consultant was unaware of the benefit of PPP under JSY till the time of this interview. The private provider was referring most of the serious/emergency cases, especially from poor families, to district hospital or tertiary care hospital at Wardha, due to non-availability of anaesthesiologist and blood bank facility at Arvi CHC — "…as there is no blood bank facility in Arvi, patients have to bring blood from Wardha (65 Km) … also we do not have anaesthesiologist in Arvi, so we have to call him from Wardha…. in times of emergency, we can't wait for anaesthesiologist or blood to come from Wardha. It will be costly for the patient and will also be a waste of time, so I directly refer them to district hospital Wardha. For those who cannot afford the transport cost go to the CHC. Here I only conduct normal delivery and elective operations, but very rarely emergency operations… only in exceptional situations when there is low or no risk."

The medical officer of the CHC in his in-depth interview expressed constraints for providing the EmOC services at Arvi. He said, "I am the medical officer here. I have to look at daily OPD. The inpatient load is also very high and I am on call

24 hours. I am not an obstetrician or gynaecologist, so how can the government expect me to provide specialized services. We need a full time obstetrician or gynaecologist here at Arvi; then only we can provide (EmOC) services. Till then only option left is to refer (patients) to the district hospital."

Hinganghat CHC (CHC-2)

Hinganghat CHC was found to be better than Arvi CHC in the sense that there are specialists who are associated with the CHC on contract basis, though many times their availability, especially of the anaesthesiologist, at the time of emergency was doubtful. This finding was well supported by the evidence generated from the tracking of five cases that have attended Hinganghat CHC for availing EmOC services.

Two of the five cases who availed the services of the Hinganghat CHC were referred from two different PHCs. Both the cases were attended by ANMs at their respective PHCs. In both the cases, the ANMs tried to deliver the baby for 3 and 5 hrs respectively, but were unsuccessful. The ANMs therefore diagnosed the cases as prolonged obstructed labour and referred them to the Hinganghat CHC. One was delivered by caesarean section and other by assisted vaginal delivery at CHC the next day. Anaesthesiologist was called from Wardha, who took 4–6 hours to reach the CHC (usual time is 1.5 hrs) after repeated telephonic calls. Patients had to bear the charges of anaesthesiologist (Rs.2,500).

Other two women who participated in the study said that they reached the CHC directly from home. The two were diagnosed as cases of ante-partum haemorrhage by the CHC Medical Officer. Both the cases were referred to the district hospital, as the required blood facility was not available. The CHC ambulance was made available to both of them. Both the cases received blood transfusion at tertiary care level and were delivered by caesarean section."…I went to CHC as it was near my home and there is a good doctor (OB consultant —

contractual basis). But I was referred to the district place by the doctor saying there was no blood available here."

The fifth woman interviewed was referred to the CHC by a private provider. The woman was 7 months 2 weeks pregnant with bad obstetric history (previous abortion and still birth) and was in labour pain when she reached the CHC. She delivered at the CHC through assisted vaginal delivery (episiotomy and manual removal of placenta). The newborn was low birth-weight and was therefore kept in warmer. The next day morning the mother along with her baby was referred to the tertiary care hospital as there was no paediatrician. The baby had to be kept in intensive care unit for 15 days.

From the mothers' interviews, the study found that the cost (direct cost) of EmOC services at Hinganghat CHC varies from Rs.5,000 to Rs.20,000. The reason for such high direct cost was identified as high fees charged by the anaesthesiologist, drugs (especially antibiotics which were to be purchased from the medical store), and transportation. As one of the five women said, "…. I made a mistake by going to the CHC. It cost me Rs.12,000. If I had gone to Wardha (district hospital) directly, my delivery would have cost me less. The anaesthesiologist came form Wardha and he takes high fees. Here we have to purchase all the medicines from outside. Nothing is available at the CHC." Thus, the high cost of treatment at CHC was perceived as a barrier for accessing EmOC services at CHCs.

One private provider (obstetric consultant) was interviewed at Hinganghat. The interview revealed that the private consultant was also referring all the emergency cases to either CHC or higher level of healthcare. The reason for this was non-availability of anaesthesiologist in town, and they do not want to take risk in such situations. Only normal delivery and elective operations were performed there. He said, "…it is a risk to keep the emergency cases that need operation here. We do not have anaesthetist here. CHCs have blood bank but blood is not available most of the time. So why to take unnecessary risk? Ambulance is available at government hospital (CHC),

from there they are taken to district hospital. Your government doctors (CHC doctors) also do the same thing."

CONCLUSION

Rapid assessment reveals that both the selected CHCs of Wardha district of Maharashtra had an adequate infrastructure to provide comprehensive EmOC. However, non-availability of full-time specialist doctors was the main barrier for providing EmOC at CHC level. The utility of the contractual staff in emergency was found to be limited, unless they are from the same town. At both the CHC areas, even though users prefer public care facility for EmOC services nearer to their home (as it requires less time and money for transportation), the pattern of EmOC service delivery and utilization was mostly skewed towards tertiary care centres because of lack of specialists at the CHCs. Serious cases of EmOC are usually referred to other tertiary care hospitals. The cost (direct cost) of services was also very high at the CHCs compared to district hospital or tertiary care hospital. Thus, at both CHCs, EmOC was not taking place in any real sense.

Adequate infrastructure is of no use without ensuring that the trained technical specialists and support manpower provide emergency services 24X7. To achieve the Millennium Development Goal (MDG) target of reducing the maternal mortality to 100 per 100,000 live births, it is very necessary that the Government of India's National Rural Health Mission addressed this workforce crisis in a comprehensive manner, as these are not just short-term gaps. Some of the recommendations that can address the workforce crises to some extent are as under:

- Increase the workforce of specialists. Skill building of staff for providing EmOC may also be of help. Short-term diploma/certificate courses in EmOC for the already existing full-time staff should be considered.
- Maharashtra has a large number of medical colleges (government as well as private). These colleges must

be involved in EmOC service delivery upto the level of CHC. However, this involvement must be to the extent of posting (PG students or lecturers) in rotation round the clock, i.e., 24X7, in CHCs, not just weekly visits. Medical colleges can also be used for capacity building process and by starting diploma or certificate courses in EmOC.

- Better involvement of private providers in EmOC services and public-private partnership (PPP) schemes needs to be implemented in true spirit. However, PPP cannot be considered as a substitute for building capacity of government staff and recruitment of full-time specialists.
- If contractual specialists are appointed at CHC for EmOC, they should be preferably from the same town.

NOTES

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8. RCH II survey
9. Red for less than 50 % of maximum score; Yellow for 51 to 75% of maximum score; Light Green for 76 to 90 % of maximum score; and Dark Green for more than 91 % of maximum score.
10. Referred to only those drugs that are necessary for EmOC as per the guidelines.

Annexure 1: Detailed Scoring of the CHCs

SN	Category	Details		Max score	CHC -1 Score	CHC -2 Score
1	Availability of services	24 * 7 emergency services	Available	1	1	1
			Not available	0		
		EmOC services	Available 24*7	2	0	2
			Available during day time	1		
			Not available	0		
		Neonatal resuscitation services	Available 24*7	2	2	2
			Available during day time	1		
			Not available	0		
2	Manpower (clinical and support)	Obstetrics & Gynaecologist	Full time	3	0	3
			Contractual, living in town	2		
			Contractual, living in another town	1		
			No	0		
		Anaesthesia	Full time	3	0	1
			Contractual, living in town	2		
			Contractual, living in another town	1		
			No	0		
		Medical Officer (general)	Available (round the clock/full- time)	2	2	2
			Available - Part time	1		

SN	Category	Details		Max score	CHC -1 Score	CHC -2 Score
		Nursing staff (for OB care)	Availability 24 * 7	2	2	2
			Available not 24 * 7/living in another town	1		
			Grossly inadequate	0		
		OT attendant/s	Availability 24 * 7	2	2	2
			Available not 24 * 7/living in another town	1		
			Grossly inadequate	0		
		Laboratory technician/s	Available	1	1	1
			Not available	0		
		Dai	Available 24*7	2	2	2
			Available but not 24 *7	1		
			Not available	0		
3	Capacity building of manpower for EmOC Training (preferable knowledge + skill based)	Clinical staff	All trained in EmOC	2	0	2
			Some trained in EmOC	1		
			None trained in EmOC	0		
		Paramedical and support staff	All trained in EmOC	2	2	2
			Some trained in EmOC	1		
			None trained in EmOC	0		

contd...

Annexure 1: contd...

SN	Category	Details		Max score	CHC -1 Score	CHC -2 Score
4	Equipments	USG Machine	Available & functional	2	0	0
			Available but not currently functional	1		
			Not available	0		
		OT equipments	All available & functional	2	1	2
			All available but not functional or partly available	1		
			Not adequately available to conduce caesarean section	0		
		Labour room equipments	All available/adequate & functional to conduct planned	2	2	2
			Partially available & functional to conduct planned	1		
			Not adequate to conduct all types of assisted delivery	0		
5	Drugs	Essential Antibiotics	Available at CHC	2	1	1
			Not available at CHC but can be made available from drug shop immediately	1		
			Neither available in CHC nor could be made available from drug shop immediately	0		
		Anaesthesia drugs	Available at CHC	3	0	2
			Not available at CHC but can be made available from drug shop immediately	2		
			Neither in available in the CHC nor could be made available from drug shop immediately	0		

SN	Category	Details		Max score	CHC -1 Score	CHC -2 Score
		Essential Obstetrics drugs	Available at CHC	3	2	2
			Not available at CHC but can be made available from drug shop immediately	2		
			Neither available in the CHC nor could be made available from drug shop immediately	0		
6	Infrastructures	ANC/PNC wards (adequate bed & mattresses-no floor bed, adequate light, adequate wall/floor protection, cross ventilation, adequate water, adequate labour tables, cleanliness of wards & toilets, facility for biomedical waste segregation)	Available – adequate	2	2	2
			Available – inadequate	1		
			Grossly inadequate	0		
7		Labour room (adequate light, adequate/ wall floor protection, adequate water, adequate labour tables, adequate labour beds, cleanliness, facility for biomedical waste segregation)	Available and functional	2	2	2
			Available but non-functional	1		
			Not available	0		

contd...

Annexure 1: contd...

SN	Category	Details		Max score	CHC -1 Score	CHC -2 Score
8		Operation theatre (adequate fixed portable operating light, universal frame type operating table with light, adequate/ wall floor protection, adequate water, adequate sterilization facility & fumigation facility, facility for biomedical waste segregation)	Available and functional	3	1	3
			Available but non-functional due to lack of facility	2		
			Available but non-functional due to lack of manpower	1		
			Not available	0		
9		Blood bank (Blood storage unit adequate capacity, round the clock power supply with backup, facility for biomedical waste segregation)	Functional (24*7)	3	1	3
			Partially functional (not 24*7)	2		
			Present but not functional	1		
			Not present	0		

SN	Category	Details		Max score	CHC -1 Score	CHC -2 Score
10	Transportation	Ambulance	Available round the clock (24*7)	4	2	4
			Available, but not round the clock (not 24*7)	3		
			Available but out of order since last one month	2		
			Available, functional but not operational due to lack of required manpower	1		
			Not available	0		
	Grand total score			52	28	45

Annexure 2: Details of the Service Availability and Investigations done as per the Record at Both CHCs

S.N.	Service	Arvi	Hinganghat
1.1.	Specialist services availability		
a.	Medicine	No	Yes
b.	Surgery	Yes	Yes
c.	Obstetrics & Gynaecology	No	Yes
d.	Paediatrics	Yes	No
e.	Emergency services 24*7 (medical & surgical)	No	Yes
f.	24 hrs delivery service	Yes	Yes
g.	EmOC (surgical and medical interventions.)	No	Yes
h.	Newborn care	Yes	No
i.	Emergency care of sick children	Yes	Yes
j.	Family planning services including sterilization	Yes	Yes
k.	Safe abortion service (MVA), MTP service	Yes	Yes
l.	Treatment of RTI and STI	Yes	Yes
m.	Laboratory (blood, urine, stool, serology, microscopic examination of urine)	Yes	Yes
n.	Blood storage facility-Institute\Tie-up with local blood bank	No\No	No\Yes
o.	Referral transport service	No	Yes
1.2	Bed occupancy rate in last 12 months	>60%	>60%
1.3	Average daily OPD attendance	129	440
a.	Male	73	183
b.	Female	56	257
1.4	Type of special surgery	-	-
1.5a.	Availability of counselling facility — HIV\AIDS\STD	Yes	Yes
b.	Is it a ICTC?	Yes	Yes
1.6a.	Antenatal\Postnatal\Immunization clinics	Yes	Yes
1.7	Separate septic labour room	Yes	No
1.8	Availability of facilities for the department of OB-GYN		
a.	Board\name plate to guide the clients	Yes	Yes
b.	Adequate working space	Yes	Yes
c.	Privacy during the examination	Yes	Yes
d.	Facility for counselling	Yes	Yes
e.	Separate toilet with running water	Yes	Yes
f.	Facility for sterilizing instruments	Yes	Yes

Annexure 2: contd...

S.N.	Service	Arvi	Hinganghat
Investigations done at CHC			
1	ECG	Yes	Yes
2	X-Ray	Yes	Yes
3	USG machine	No	No
4	Training on ECG to the nursing staff	Yes	Yes
5	Outsourcing laboratory tests to a private agency	Yes	Yes
6	All necessary reagents, transport facilities available	Yes	Yes

Annexure 3: Physical Infrastructure of the CHCs

S.N.	Physical infrastructure	Arvi	Hinganghat
1.	CHC Located	In village	In village
2.	Designated government building available	Yes	Yes
3.	Construction of building	Completed	Completed
4.	Cleanliness	Good	Good
5.	Garbage\Cattle shed\Stagnant pool\ Industrial pollution	No	No
6.	Location of CHC: <2hrs from farthest village\<4hr from district hospital; feasible to hold workforce	Yes	Yes
7.	Availability of private setup\charitable hospital hospital\NGO hospital	Yes\No\No	Yes\Yes\Yes
8.	Prominent display board in local language	Yes	Yes
9.	Registration counter	Yes	Yes
10.	Pharmacy for drug dispensing near main entrance	Yes	Yes
11.	Separate public utilities for male and female visitors/clients	Yes	Yes
12.	Suggestion/Complaint box	Yes	Yes
13.	OPD rooms\cubicles	8	6
14.	Adequate no. of window in each room	Yes	Yes
15.	Family Welfare Clinic	Yes	Yes
16.	Waiting room for patients and family members	No	Yes
17.	Emergency room\casualty	Yes	Yes

contd...

Annexure 3: contd...s

S.N.	Physical infrastructure	Arvi	Hinganghat
18.	Separate ward for male and female patients	Yes	Yes
19.	No. of bed male\female\paediatrics	25\25\0	49\51\10
20.	Operation theatre –Fulfilling IPHS norm	Yes	Yes
21.	Labour room-Present\used to conduct delivery	Yes	Yes
22.	X-ray room with dark room facilities	Yes	Yes
23.	Laboratory present\adequate equipment\maintained	Yes	Yes
24.	Water supply-source\over head tank with pump\sufficient capacity\pump in working condition	Piped\Yes	Piped, well\ Yes
25.	Sewage-type1-soak pit, 2-connected to local body, 3-open drainage	3	2
26.	Waste disposal	Deep burial	Deep burial
27.	Electricity — in all parts\regular power supply\working generator	Yes	Yes
28.	Laundry facility available? (not available in both the CHCs)	on contract	on contract
29.	Communication Telephone\number of lines\PC\NIC\ Email\accessible by road and rail	Yes\1\ Yes\	
No\ No\ Yes	Yes\2\Yes\yes\ No\yes		
30.	Vehicle no. on road\sanctioned	1\1	1\1
31.	Office room\store room\kitchen room	Yes	Yes
32.	Diet provided by the hospital	No	No
33.	Residential Facility (all staff in the CHC)	Yes	Yes
34.	Dharamshala — stay facility\toilet\ cooking for patient-party	Yes\No\No	Yes\No\No
35.	CHC OPD timing	8-12,4-5-pm	8.30-1pm
36.	Manageable patient admitted\emergency t\t provided	Yes \yes	Yes \yes
37.	For referred patient ambulance is provided\fuel charge	Yes \yes	Yes \yes
38.	Behaviour per norm	Yes	Yes

Annexure 4: Details of Equipments Available at Both the CHCs

S N	Equipment	Arvi	Hinganghat
1.	Blood storage unit	Yes	Yes
2.	ECG machine	Yes	Yes
3.	X-ray 100mA	Yes	Yes
4.	OT air-conditioner	Yes	Yes
5.	Boyle's apparatus	Yes	Yes
6.	Oxygen\nitrous cylinder	Yes	Yes
7.	EMO machine	No	No
8.	Cardiac monitor\Defibrillator\ventilator	No	No
9	Horizontal\vertical high pressure sterilizer	No	Yes
10	Shadow-less lamp ceiling\pedestal	Yes	Yes
11.	OT care\fumigation apparatus	Yes	Yes
11	Glove dusting machine	No	No
12.	Hydraulic operation table	No	Yes
13	ILR\Deep freezers\Refrigerator	Yes	Yes
14.	Intercom\personal computer	Yes	Yes
15.	Ultrasound Machine	No	No
16.	KIT-E\F\G\H\I\J\K\L\M\N\O\P (not available)	K,P only	No

Annexure 5: Availability of Trained Clinical and Support Staff for Providing EmOC at CHCs in Comparison to IPHS Norms

S.N.	Personnel	IPHS norm	Arvi	Hinganghat
1	Obstetricians & Gynaecologists	1	0	1 (contractual)
2.	Physician	1	0	1
3.	General surgeon	1	1	1
4.	Paediatricians	1	1	0
5.	Anaesthesiologists	1	0	0
6.	Public health programme manager	1	0	0
7.	Eye surgeons	1	0	2
8.	Medical officers		6	2
9.	Nursing staff	7+3	7+3	7+3
10	Public health nurse	1	0	0
a.	ANMs	1	0	0
b..	Staff nurses	7	9	21
c.	Nurse Midwife (Nursing sister)	1	1	4
d.	Dresser	1	0	1

contd...

Annexure 5: contd...

S.N.	Personnel	IPHS norm	Arvi	Hinganghat
11.	Pharmacist	1	2	3
12.	Lab. Technician	1	1	4
13.	Radiographer	1	1	1
14.	Ophthalmic Assistant	1	1	1
15.	Ward boys/nursing orderly	2	5	9
16.	OPD Attendant	1	0	3
17.	Statistical Assistant\ DEO	1	0	0
18.	OT Attendant	1	0	1
19.	Registration clerk	1	1	2
20.	Any other staff		Lab asst, Driver	Driver, office superintend-ent

Note: Rows highlighted in grey show staff necessary for providing basic and comprehensive EmOC service