AVERTING MATERNAL DEATH AND DISABILITY : ROLE OF EOC IN CHITTAGONG DISTRICT

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Summary

Objectives of this study are: 1.To find out the number of facilities providing EmOC services in rural areas of Chittagong district. 2. To assess the proportion of women who deliver at Emoc facilities. 3. To find out the "METNEED" at EmOC facilities. 4. To find out the caesarean deliveries as a proportion of all births at EmOC. 5. To see the "Case fatality rate" which reflects the quality of care & facility performance. This is a retrospective study between January 2009 to December 2009 done in thirteen upazilla health complexes in Chittagong district of population size- 52,39,000. Outcome measures are availability of EmOC, Proportion of births in EmOC facilities,Met need,Cesarean deliveries & case fatality rate. About 6.7 % of births take place in Comprensive EmOC facilities and 2.4 % in Basic EmOC(i.e.About 9.1 % births are institutional). Study shows that "Met Need" is about 18%. Only < 0.8 % of all births in the population is delivered by caesarean section. In this study case fatality rate is only .067 %. This study describes the baseline indicates calculated in different upazillas. In Chittagong only 5 Comprehensive EmOC services are not sufficient to cover the largely populated area. If we expand the Basic EmOC and Comprehensive EmOC we can help the people even in grass root level.

Key words

Comprehensive EmOC; basic EmOC; maternal death and disability

Introduction

Everyday in Bangladesh 1500 women die from pregnancy or childbirth related complications[1]. Approximately 25,800 women and girls die each year due to same cause[2]. The government of Bangladesh has committed to reduce the maternal mortality to 1.43 by the year 2015[3]. About 70 % of all maternal deaths are caused by five main factors[4]:

1. Haemorrhage
2. Infection
3. Unsafe abortion
4. Pregnancy Induced hypertension
5. Obstracted labour

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To reduce maternal death all women need access to high quality delivery care with at least three key elements :

- Skilled care at birth
- Emergency obstetric care in case of complications
- Functioning referral system which ensures access to emergency care if needed[4].

About fifteen percentage of all pregnancies will result in complications[5]. Most of the complications can not be accurately predicated and most often can not be prevented but they can be treated. Emergency obstetric care(EmOC) emerged as one of the key element required to achieve this goal. It is a case management approach focusing on treatment of complications.The eight crucial procedures known as "signal function" distinguish facilities-that provide EmOC from those that do not and between those that provide Basic EmOC from those that provide Comprehensive EmOC.

Signal Function

1. Parenteral antibiotics
2. Parenteral oxitocic drugs
3. Parenteral anti- convulsants for Severe pre-eclampsia and Eclampsia ,
4. Manual removal of placenta,
5. Removal of retained product of conception (e.g . Vacuum aspiration)
6. Assisted vaginal delivery (e.g. Vacuum extraction, forceps)
7. Surgery (e.g Caesarean delivery) and
8. Blood transfusion[6]. If a facility has provided the first six functions in the past three months, it is said to provide **Basic EmOC**.If it has provided all eight of the functions, it qualifies as **Comprehensive EmOC**.

Though EmOC started in a phase wise manner in our country in selected centers, the target is to ultimately provide Comprehensive EmOC in all district hospitals and selected upazilla health complexes.

- At present Comprehensive EmOC facilities are available in:
- Govt. Medical College Hospital- 13
- District Hospitals- 64
- Maternal and child welfare centers- 64
- Upazilla Health complexes- 269

Basic EOC services are available at -

- Upazilla Health Complexes- 132
- Some other NGO's and private institutions also provide EOC services[7].

Objectives

1. To find out the number of facilities providing EmOC services in rural areas of Chittagong district.
2. To assess the proportion of women who deliver at EmOC facilities.
3. To find out the "METNEED" at EmOC facilities.
4. To find out the caesarean deliveries as a proportion of all births at EmOC.
5. To see the " Case fatality rate" which reflects the quality of care & facility performance.

Materials and methods

1. Study design: Retrospective.
2. Study period: January 2009 - December 2009
3. Study place: Thirteen upazilla health complexes in chittagong district.
4. Population size- 52, 39,000.

Inclusion criteria

- Five upazilla health complexes (UHC) of chittagong district-
*Fatikchari,
*Mirsarai,
*Lohagara,
*Bashkhali,
*Patiya,
having Comprehensive EmOC facilities.
- In other eight UHCs of Chittagong district where only Basic EmOC facilities are available.

Exclusion criteria

Among the Upazillas the documents of Basic EmOC activities from Sandwip UHC are not available.
MCWC- Pachuria, Patiya.
All Comprehensive EmOC in Govt. and NGOs in Chittagong Town.

Outcome measures & indicators

Table I : Process indicators

Indicatror	Defination	Numerator	Denominator	Recommended level
Avaailability of EmOC	No.of Facilities providing EmOC comprehensive EmOC	No.of Facilities providing basic or	500000 population population; 4 basic per 500000	1comprehensive per 500000
Prioportion of all births in EmOC Facilities	Prioportion of all births in EmOC Facilities in time period	No. of births delivered in EmOC Facilities period	Estimated no. of births in area in same time	> 15 %
Met need	Prioportion of women with obstetric complications delivered at EmOC Facilities	No. of women with obstetric complications treated in EmOC Facilities in time period	Estimated no. of women with obstetric complications	100%
Caessarean deliveries as a proportion of all births	Caessarean deliveries as a proportion of all births	No. of Caessareans in time period	Estimated no. of births in same time period	5-15 %
Case fatality rate	Prioportion of women with obstetric complications admitted to a facility who die	No. of deaths in facility due to specific complications during time period	No. of women treated for specific complications in facility in time period	< 1%

[Baily PE. Averting Maternal death and disability. Int Journal of Gynae and Obs 2002; 76: 299-305]

Data Collection

a. Reports from Civil Surgeon office, Chittagong January 2009 to December 2009.
b.Information from QAT (Quality Assurance Team) reports July 2009 to September 2009.
The study employed both qualitative quantitative data of survey of records and registers of existing EmOC facilities.

Results

Table II shows for the population size(52,39000), 13 Basic and 5 Comprehensive EmOC facilities are be available now . Only thirteen facility provides the full set of Basic EmOC services , or 32.5 % of recommended number . Five hospitals provides Comprehensive EmOC which is 50 % of the recommended number.

Table III shows about 6.7 % of births take place in facilities that provide Comprehensive EmOC and 2.4 % in Basic EmOC , an indication that women in need of services are not receiving them.About 9.1 % births are institutional .

About 18 % of the women who are estimated to have severe obstetric complications are receiving treatment at facilities that provide comprehensive EmOC (Table IV).

Only < 1 % of all births in the population is by caesarean section which should be 5-15 % (Table V).

In this study case fatality rate is only 0.067% but recommended maximum is 1 % (Table IV).The case fatality rate is lower than the recommended maximum of 1 % because severely complicated patients were not treated in EmOC centre, which were reffered to tertiary health care centre.

Table II : Availibility of EmOC

Population size	Current availability		Recommended Number	
52,39000	Basic EmOC 13(32.5 %)	Comprehensive EmOC 5(50%)	Basic EmOC 40	Comprehensive EmOC 10

Table III : Proportion of births in EmOC facilities

Facility type 5Comprehensive	Number of births	Expected number of births	Proportion	Recomended
EmOC	7354	110000	6.7 %	15 %
9 Basic EOC	2614	110000	2.4 %	

Table IV : Met need

Facilities	Number of women with complications treated	Expected number of complications in population	Metneed	Recomendation
5 Comprehensive EmOC	2950	16500	17.87 %	100 %
9 Basic EmOC	413	16500	2.50 %	

Table V: Cesarean deliveries as a proportion of all births

Number of Cesarean section	Expected number of births	Proportion	Recommended Range
882	110000	0.8 %	5 – 15 %

Table VI : Case fatality rate for facilities reporting maternal deaths

Number of maternal deaths / complications	Case fatality rate	Recommended maximum
2950	0.067 %	1 %

Discussion

According to the 1st indicator, for the population 5,00,000, 1 Comprehensive EmOC and 4 Basic EmOC facilities should be available[6,8]. But the Study Shows in Chittagong District for the population size (52,39,000), 13 Basic EmOC and 5 Comprehensive EmOC facilities are available which are only 32.5% and 50% of the recommended number respectively. The Actual need is 40 Basic EmOC and 10 Comprehensive EmOC facilities (Table: II). A study was carried in seven districts in of Rajasthan of India in 2000. In seven districts of Rajasthan of India there were 13 million population .Only 39 Basic (37%) and 8 comprehensive (31 %) of recommended number were available, where as 104 basic & 26 comprehensive EmOC were needed[8]. Another study was done in three districts of the Province of Sindh (Sanghar, Hyderabad, Karachi west) of Pakistan in 2000. Where the population were 6450439. According to the population size 52 basic & 13 comprehensive EmOC needed. But only 16 basic EmOC were available. But comprehensive EmOC were 13, which full fill the need[9]. According to the 2nd indicator proportion of all births in EmOC facilities, the recommended number is 15%[6,8]. But study shows in chittagong district, about 6.7% births take place in Comprehensive EmOC facilities and 2.4% in Basic EmOC (i.e. About 9.1% births are institutional), which indicates that EOC service is inadequate. (Table: III)

In seven districts in of Rajasthan of India only 10 % of births occurs in the facilities surveyed[8]. In three districts of Pakistan it was only 7.9%[9]. The 3rd indicator is 'Met Need', the recommended number is 100%[6,8]. Study shows that "Met Need" is about 18%. (Table : IV) About 18 % of the women who are estimated to have severe obstetric complications are receiving treatment at facilities that provide comprehensive EmOC. In seven districts in of Rajasthan of India 'Met Need' was only 8.9 % where as among the three districts of Pakistan data from west Karachi were not available & it was 12.4 % in Sanghar and 11.1 % in Hyderabad[8,9]. The 4th indicator is "Caesarean deliveries at EmOC facilities" and recommended number is 5-15%[6,8]. But in this study, in Chittagong District, only 0.8% of all births in the population is delivered by caesarean section. (Table: V). In Rajasthan of India and the three districts of Pakistan only 1 % of all deliveries were by caesarean section, falling short of the recommended lower level of 5 %[8,9]. The 5th indicator is Case fatality Rate and recommended number is <1%[6,8] In the study, in Chittagong District, case fatality rate is only 0.067% . (Table: VI) This is because severely complicated patients were not treated in EmOC centre, which were referred to tertiary health care centre e.g. Chittagong Medical College & Hospital. In Rajasthan of India case fatality rate was 1.6 %, it was so high than recommended level .Among the three districts of Pakistan data of case fatality rate of west Karachi was not available, it was 0.5 % and 0 % in Sanghar & Hyderabad respectively. It may reflect either good provider practices, low utilization of Services or problems with the registration of deaths and complications or some combination of these explanations.

Conclusion

This study describes the baseline indicators calculated in different upazillas. In Chittagong only 5 Comprehensive EmOC services are not sufficient to cover the largely populated area. If we expand the Basic EmOC and Comprehensive EmOC facilities we can help the people even in grass root level.The indicators of the proportion of birth in EmOC facilities tells us that women are not using the services to the extent they need.

The low level of Met need and the proportion of birth by caesarean section indicate that women are not receiving or seeking emergency care they need. Delivery at home is clearly the common practice in our country, which is a problem when women can not or do not seek EmOC services when the need arises. The process indicators will be calculated periodically to monitor the progress of program efforts. Training of the stuff to carry out the procedures, maintaining a constant supply of emergency drugs and functioning equipments are very essential to reduce maternal mortality and disability.

Disclosure

All the authors declared no competing interestes

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