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REVIEW ARTICLE

Maternal mortality reduction in Assam

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ABSTRACT

The quality antenatal care is the mainstay to reduce maternal mortality. The identification and early treatment of anaemia, preeclampsia, sepsis, postpartum and antepartum haemorrhage is of paramount importance in order to improve the maternal health status. The underserved and inaccessible areas like teagarden areas, riverine areas, border areas etc need special emphasis in Assam. The delay in reaching and getting treatment in health care facilities is a matter of concern. The training of doctors and nurses in emergency obstetric care (EmOC) is highly essential. Implementation of evidence based strategies to increase utilization of maternal health care services is necessary.

Keywords: Maternal mortality, antenatal care, EmOC.

As India is a growing economic power, its responsibility to save maternal life during pregnancy and delivery is of paramount importance. As our state is considered as one of the state of high maternal mortality, it needs substantial steps from all concerned to reduce such an unacceptable rate. According to Niti Aayog [1] the maternal mortality rate (MMR) (2014-16) in India is 130/lakh live birth. Assam has the highest MMR of 237, where as Kerela has 46. The Govt, health personnel, media, people must take an endeavor together to reach such a goal. It is a divine endeavor to save maternal lives. With this concept in mind a framework is prepared for taking effective steps in these regards. With cooperation, will, determination of all concerned we will be able to attain this height. The maternal mortality is a complex interaction between medical, cultural, logistic, socio economic factors, health care facilities, and public awareness.

Modalities - Four modules: a) Post Partum Haemorrhage, b) Sepsis, c)Pre eclampsia & Eclampsia, d)Anaemia

- To discuss with Medical officers of FRU, CHC, PHC at district level in monthly meeting
- A 2hr programme from 11-30am to 1-30pm
- District O & G specialist will deliberate on various tropics
- A faculty from one of the medical college will participate time to time

1. **Quality antenatal care**: The quality antenatal care is the cornerstone for good MMR. The antenatal check up protocol should be adhered strictly. The antenatal check up is usually limited to registration, two Tetanus Toxoid injections in the first half of pregnancy. But most of the pregnancy complications occur in second half of pregnancy. Therefore minimum 3 antenatal check up should be done in 28, 32, 36 weeks of

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pregnancy ensured by Medical officers, Nurses, Asha workers and public awareness programme. The importance can be ascertained from the fact that complication likes hypertension in pregnancy, anemia can be diagnosed during pregnancy and adequate measures taken then the MMR can certainly be reduced. Therefore, the focus should be practical implementation of quality antenatal care. As for the ANM (auxiliary nurse midwife) giving antenatal care in the community, they should be trained by medical officers of CHC (community health centre), PHC (primary health centre), Mini PHC, with the help of SBA (skilled birth attendant) trained nurses, so that they can identify these complications and refer to the doctors. The Asha workers should also be trained in their respective PHCs. Otherwise antenatal check up will end up with just giving T. Toxoid and iron & folic acid tablets.

a) **PPH** (Postpartum haemorrhage): The management of PPH is of vital importance, as it is a leading cause of maternal death. The Medical officers, nurses must be trained to control PPH as it needs urgent intervention. The blood bank should be established up to FRU (First Referral Unit) level. The blood transfusion facilities should be available in CHC, PHC level if we want to save mothers dying from bleeding.

b) **Sepsis:** It is a cause of major concern in lowering MMR. In delivery, adequate antisepsis & asepsis should be ensured. Usually the labour room is not sterilized time to time, which may be breeding ground of infection. There should be mandatory septic labour room which may not be available in health care facilities. Institutional delivery, delivery by skill birth attendant, clean delivery, antibiotic, personal hygiene, early detection & treatment can take care of sepsis. The unsafe abortion is a killer. The safe and legal abortion by skilled person with proper facilities, access to family planning services, antibiotics, post abortion care can save lives.

c) **Management of Pre eclampsia & Eclampsia**: The identification of preeclampsia is of paramount importance in order to reduce MMR. It is mandatory to check up the BP in every antenatal check up. If it is not correctly seen then it is huge disservice to the pregnant women because the patient may undergo disastrous consequences if high BP is not detected. All health service providers must be aware of it. Such patient should be managed as per protocol. If necessary they should be sent to higher centre, on the other hand if there is severe preeclampsia then they should be sent to civil hospital or medical college after properly counseling them so that cases are not lost. As per management of eclampsia, the necessary management like giving intramuscular dose of Mg sulfate should be given as per protocol. Airway is to be cleared. Oxygen should be given. The case is to be transported to well equipped health care facilities in "102" ambulance without delay.

d) **Anemia in pregnancy**: As anemia in pregnancy is very high in Assam it contributes significantly in MMR in Assam. Moreover the compliance of oral iron therapy in Assam even it is supplied is very low. Only iron sulfate salt is supplied with lot of side effects. So the Govt. may consider to supply other iron preparations which may be tolerable. Therefore the compliance of iron therapy needs to be stressed by all health care providers. The routine ion & folic acid tablet from 2^{nd} trimester of pregnancy, calcium supplementation, worm treatment, prevent & treat anemia in adolescent girls, detect early, Hb% estimation in pregnancy time to time,

manage adequately in antenatal, intranatal, postnatal periods are the measures to be taken. If necessary, such cases need to be admitted & treated as per protocol. It must be made mandatory to estimate Hb% in antenatal check up time to time by health care providers as it can save lives. As the compliance in oral iron therapy is poor, so intravenous iron sucrose therapy in pregnancy should be made available in health care services & the health care providers should be adequately trained in it. The good quality intravenous sucrose therapy can really manage anemia as proved in several trials in India.

e) **Obstructed labour and Rupture uterus**: The care during delivery is of utmost important. The labour should be monitored closely If the signs of prolong labour or obstructed labour is developed it should be detected early & sent to higher centers where it could be managed properly by ensuring service of ambulance"102". One must be careful while using pain enhancing drugs during labour like oxytocin, prostaglandins as it may cause rupture of uterus & foetal death. One must learn to prevent & detect the rupture of uterus which may take lives.

In well equipped centre, the ruptures of uterus must be detected early & treated energetically as per protocol.

Referral: The delay in reaching and getting treatment in health care facilities is a matter of concern [2]. The delay in home at decision making, delay in transport and the delay in getting treatment in health care facilities add to increased MMR. In a study [3] in developing countries, 23% dies at home, 30% dies in way to health centre. To save lives the proper and timely reference is necessary. The transportation from referral hospital should be ensured early by using "102" ambulance services as the delay may cost lives. The referral hospitals should provide with some informations eg. i) proper cause of referral, ii) diagnosis, iii) treatment received, iv) time and date of referral.

Focused approach: In Assam, some areas are underserved due to various other reasons. These areas need special emphasis like inaccessible areas, teagarden areas, riverine areas, border areas etc.

The concept of half way home in maternal health: This practice is used in Malayasia to reduce MMR for the people living in accessible area. A 12 beded house within the walking distance of health facilities with dormitories in a homely and friendly atmosphere with all female staff is needed. The nurses will monitor the cases all the time; the doctor will visit time to time. The case which are not serious but need prolong stay can be admitted in this home rather than sending them to remote home. As for example, a patient with severe anemia in 7 months of pregnancy if sent back to remote home, she may come back at serious state with heart failure or PPH then she may not be saved. But if she is admitted in such a home, she may be given iv iron sucrose under supervision with good nutrition and her severe anemia can be corrected. The patient feels safe. The transportation to heath facilities is easy. If required the referral is quick and easy. The different therapy can be given in this facility. The facility will be run by the nearby health care facility.

In Malayasia, 171 patients managed between June 1995 to September 1998 in one such centre in Juli district. Ninety three delivered normally without PPH or any significant complication. Seventy eight women are referred for primigravidae with complication; prolong labour, breech presentation, past difficult delivery, anemia, and hypertension. Four had CS, 6 assisted breech delivery, 6 forceps delivery. One baby has low APGAR score after CS, but the baby recovered [4]. Therefore such half away home can be introduced in order to serve inaccessible areas to lower MMR.

Riverine areas: The huge population lives in these areas with sometime temporary and shifting shelter. The speed ambulance should be introduced. The no. of boat clinic can be increased. The Border Security Force (BSF) can be approached for transport and treatment. The sand friendly vehicle can be used as an ambulance. Moreover the public awareness should be created for adequate antenatal care and institutional delivery. The education of

the people should be improved and the small family norm should be popularized.

Tea garden areas: There is huge population. The health care facilities are available but not utilized by them. The health care personnel from Govt. and tea garden hospitals should go home to home rather than waiting for them to come. The public awareness about adequate ante natal check up and institutional delivery should be created. The general education status is to be improved.

Border areas: The road connectivity is to be increased. The BSF health unit can be approached for coordination. The coordination with neighboring states should be strengthened. The referral system is to be improved.

Man power training: The training of doctors and nurses in emergency obstetric care (EmOC) is highly essential. Where O & G specialist are not available, the doctors should be trained in EmOC. The SBA training to nurses should be given vigorously. The nurses need to be trained adequately if we want to reduce MMR.

Supervision and monitoring: A district level team should supervise and monitor health care facilities to ascertain proper facilities like infrastructure, training and other necessities once a month. A supportive supervision will yield better results. A faculty of medical college can be included time to time. Moreover the team from NHM can supervise and monitor different health facilities.

Maternal mortality review meeting: In Malayasia very well implemented confidential maternal mortality review has been successful. They appointed maternal mortality coordinator in hospital and community and in private hospital to inform health authorities through police. They will interact with family to do verbal autopsy and to report to regional MCH officer and then to regional review committee. They send their report to national technical committee for appropriate action [5]. In India, there should be monthly maternal mortality review meeting as per guideline. It should be implemented in the district strictly. We can get a look at the system of Malaysia. It will be better to improve the weakness of the system rather than finding fault of individual because individual identification may lead to defensive practice by health personnel rather than leading the brigade in our battle against maternal mortality.

Effort in India: FOGSI (Federation of Obstetrics and Gynaecological Societies of India) [6] has suggested three steps in these directions - Step 1: The woman should understand the crisis in her life; Step 2: Prevention is the best way. The framework is a) childhood and adolescent health care, b) to prevent pregnancy complication, early detection and treatment, c) clean and safe delivery, d) implementation of family planning programme, e) predicting and early diagnosis of post reproductive diseases, f) 100% institutional delivery with experienced health care providers; Step 3: Curative: the curative effort are necessary if situation demand, a) management of puberty and adolescent problems, b) early diagnosis of complication of pregnancy and prompt management, c) clean and safe delivery, d) prevent 3rd stage complications.

Tips of Reducing MMR: The following steps can generally be taken to reduce MMR [7]-

1. Women must have access to skilled care before, during and after they give birth.

2. Health providers must be trained in emergency obstetric care. Health centers and clinics must have surgical supplies to handle complications.

3. Maternal health care systems must be strengthened, and communities mobilized and educated to improve deliveries in birth clinics.

4. Skilled community based birth attendants should be trained and posted to increase maternal coverage in remote areas.

5. Give incentives to health providers to motivate them to do their job effectively.

6. Contract with private organizations to deliver maternal health care services. This will ensure rural areas are covered and will reduce supply shortages but attention must also be paid to the quality of service provided.

7. Educate and empower women and girls about maternal health issues. They compose two-thirds of the world's illiterates and 70 percent of the world's poorest people. Educated and empowered women can lead healthy lives and can lift their families out of disease. They usually marry later, and have fewer and healthier children who are more likely to attend school.

8. Empower women's groups so they can deliver political success and tangible health outcomes.

9. Launch professional, well informed advocacy groups to call for action on maternal health.

10. Implement streamlined and evidence based maternal health interventions.

11. Implement evidence based strategies to increase utilization of maternal health care services.

12. Remove user fees for maternal health care services and provide transportation services to maternal health centers which alone can double the utilization of the centers' services.

13. Evaluate and monitor maternal and child health policies.

14. Make sure that the appropriate government ministries are accountable to the public about the performance of investments in maternal health.

15. Create strategic alliances between groups representing maternal health, as those will open doors to political and financial support. Currently, maternal health communities have many leaders but no leadership.

16. Make child and maternal survival a core national and global health concern.

Data Collection: As already done by NHM (National Health Mission) in Assam, the data collection in MMR district wise should be done by monthly so that the areas of high MMR can be identified and special focus can be given in these areas.

Recognition: The good performing districts should be identified on an yearly basis and can be given a certificate of appreciation. Similarly CHC, PHC of every district can be identified for good MCH (Maternal and Child Health) services and can be given a certificate of appreciation.

Conclusion

In order to improve the MMR in Assam a holistic approach is necessary. As Assam has highest MMR in India, it is the need of hour for detailed analysis and appropriate measures to lower the MMR. All the stakeholder need to be involved. A massive awareness programme among public to utilize the health care facilities should be arranged.

Conflict of interest: None. **Disclaimer:** Nil.

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