

Assessment of the Quality of Emergency Obstetric Care at the Federal Medical Centre, Makurdi, Nigeria.

Silas Ochejele, Joseph Enegele and Arthur Heywood

¹ Federal Medical Centre, Makurdi, ² Partnership For Transforming Health Systems, Benue State

Abstract

Context: This audit was conducted with the goal of reducing maternal mortality by finding out the quality of obstetric services rendered, because of the frequent maternal deaths in the centre, with the aim of upgrading the standard of care.

Objective: To assess the quality of emergency obstetric care using the maternal mortality ratio, case fatality rate, the caesarean section rate and management problems (Drugs, Equipment and Staff).

Subjects and Methods: A four year descriptive study of obstetric service data from 1st January 2000 to 31st December, 2003 in Federal Medical Centre, Makurdi.

Results: During the study period, there were a total of 3,551 deliveries and 83 maternal deaths giving a maternal mortality ratio of 2,337/100,000 deliveries. Of the 83 maternal deaths, adequate data for analysis of the Case Fatality Ratio was available in 73 (88%). Out of these 73 deaths, there were 66 direct maternal deaths. Total recorded direct obstetric complications for the period were 459 giving the overall case fatality rate of 14%. The caesarean section Rate was 10%. Parenteral antibiotics and anticonvulsants and blood were not immediately available in the maternity during the period. The readiness and responsiveness of the staff to obstetric emergencies during the period was slow.

Conclusion: The results suggest that the quality of Emergency Obstetric Care (EmOC) in the centre is poor and this is a call to action.

Key Words: Quality Assessment, Emergency Obstetric Care (EmOC)

[Trop J Obstet Gynaecol, 2004;21:160-163]

Introduction

Sudden complications during pregnancy and childbirth are the main causes of maternal mortality and morbidity. Most complications cannot be predicted and therefore occur as emergencies but they can be successfully treated provided women reach functioning quality obstetric services in time¹.

Since the International Conference on Population and Development (ICPD) was held in Cairo in 1994, there has been a growing understanding of the pathways to maternal death and disability and the approaches that produce best results. As a result, by the time of the five years review of ICPD; emergency obstetric care had been incorporated as a key element of successful approaches to reduce maternal death and disability. This is now part of the global consensus¹.

Providing quality Emergency Obstetric Care (EmOC) and monitoring its use remained a challenge for many planners and program managers who had no tools with which to tell if women were able to get the care they needed in time to save their lives. In 1997, a way forward was presented in the "Guidelines for monitoring the availability and use of obstetric services", produced jointly by the United Nations Children's Fund (UNICEF), the World Health Organization (WHO) and United Nations Fund for Population Activities (UNFPA)¹.

A major contribution of the guidelines was that it introduced a set of six process indicators. One of the indicators (the case fatality rate) shows whether the

Quality of EmOC services provided is of acceptable standard.¹

Quality EmOC incorporates readiness, emergency response and client's right, while recognizing that specific rights and needs of staff must be met to achieve these ends. Quality EmOC poses an unusual challenge to management because it must be available 24 hours a day, seven days a week to be maximally effective².

Quality can be assessed at 3 levels of service delivery. The Policy Level (PL), the Service Delivery Point (SDP) and the Client's Level (CL)³. This study seeks to assess the quality of EmOC at the second level (that is, at the Service Delivery Point). This would help in determining the baseline and in monitoring the quality of EmOC in the hospital. Benue State has a population of 3.8 million people, with 152,000 deliveries expected annually, of which 15% (22,800) are expected to be obstetric emergencies. The Federal Medical Centre Makurdi (FMCM) is the only tertiary health institution in Benue State and it is expected to provide high quality EmOC for referrals from the surrounding general hospitals.

Objective

The objective of the study was to assess the quality of EmOC using the maternal mortality ratio, case fatality

Correspondence: Dr. Silas Ochejele, Federal Medical Centre, Makurdi.

e-mail: silasfriday@yahoo.com

rate, the caesarean section rate and management problems (drugs, equipment and staff) over a period of four years, since 2000, when adequate records were first kept.

Materials and Method.

The four year descriptive study was carried out using routine obstetric service data, from 1st January 2000 to 31st December, 2003. The study reviewed data from medical records, theatre, labour ward, postnatal ward and gynecology ward registers and patient case files. Direct observation and staff interview were also used. The four years sample was chosen because only since the year 2000 were the records organized enough to get the adequate data.

Working definitions of direct obstetric complications was derived from IMPAC/WHO (Integrated management of pregnancy and childbirth/World Health Organization) and International Federation of gynecology and obstetrics save the mothers projects¹. Maternal deaths that occurred in the centre during the period were analyzed in relation to the Maternal Mortality Ratio (MMR), and the Case Fatality Rate (CFR). The caesarean section rate and management problems (Drugs, Equipment and staff) were also studied to better understand the quality of EmOC in the centre. The numerator for the CFR was direct obstetric deaths and the denominator was the direct obstetric complications (Ruptured uterus, obstructed labour, eclampsia/severe pre-eclampsia, obstetric hemorrhage, puerperal sepsis, complications of abortion and ectopic pregnancy). In no case of maternal deaths, was a post-mortem examination performed. The diagnoses were therefore clinical.

Results

During the study period there were a total 3,551 deliveries and 83 maternal deaths giving an overall maternal mortality ratio of 2,337/100,000 deliveries. The total number of caesarean section for the period was 355, giving the caesarean section rate of 10%. There were 459 direct obstetric complications for the period. Out of the 83 maternal deaths, complete data for the analysis of the CFR was available in 73 (88%). Out of these 73 maternal deaths, there were 66 direct maternal deaths giving a case fatality rate of 14%. Seventy-eight (94%) of the maternal deaths occurred after admission to the obstetrics and gynecology wards. The other 5 deaths (6%) occurred in the accident and emergency ward. Obstetric emergencies, except labour cases were admitted through the accident and emergency unit manned by surgical residents. Maternal deaths for the year 2002 in this study included records from medical record registers which included death from the accident and emergency unit. The record of maternal deaths for accident and emergency ward for 2000, 2001 and 2003 were misplaced due to the industrial disharmony in the centre and poor record keeping. There was no column

for booked and unbooked emergencies in the registers. Table 1 shows the yearly maternal deaths, Total births and maternal mortality ratio.

TABLE 1: Maternal Deaths, Total Births and Maternal Mortality Ratio.

INDICATOR	YEAR			
	2000	2001	2002	2003
Maternal deaths	25	17	27	14
Total deliveries	1,015	956	1,003	577
Maternal mortality ratio	2,463	1,778	2,692	2,426

Table 2 shows the yearly direct obstetric complications, direct maternal deaths, case fatality rate and caesarean section rate.

TABLE 2: Yearly Direct Obstetric Complications, Direct Maternal Deaths, Case Fatality Rate and Caesarean Section Rate.

INDICATOR	YEAR			
	2000	2001	2002	2003
Direct obstetric complications	155	128	92	84
Direct maternal deaths	19	12	18	13
Case fatality rate	12%	9%	20%	15%
Caesarean section rate	11%	8%	11%	10%

Availability of Drugs

The availability of essential drugs in the maternity was poor with no parenteral antibiotics, anticonvulsants and antihypertensives available.

Availability of Medical Equipment

There were two vacuum deliveries (one in 2000 and one in 2001) giving an overall instrumental vaginal delivery rate of 0.06 percent. Since 2001, the vacuum has been faulty and has never been used. There was no forceps delivery, removal of retained products of conception was done by the curette; there was no strips for urinalysis in the maternity. Blood was not immediately available for transfusion.

Evaluation of Staffing

There was one consultant in the department in the year 2000, two in 2001 and 2002 and three in 2003. There were 3 residents in the unit during the study period. All the consultants were working as a unit until December 2003 when they split into teams because two additional residents were employed.

There were 19 midwives in the maternity with an average workload of 15 deliveries/midwife/month. The midwives on duty also cover the postnatal and maternity surgical wards. Obstetric emergencies admitted in the accident and emergency ward are seen by surgical residents before the Obstetric and gynaecological residents are called. They are then seen by the house officers after being admitted to the obstetric

Obstetric and gynaecology wards. This leads to delays in management. No doctors, theatre nurses, anesthetists or laboratory scientists slept in the hospital during the study period. There was frequent industrial action during the period. In 2003, the hospital was not rendering services for five months because of industrial action. Salaries were however regular.

Discussion

The maternal mortality ratio (MMR) in this study was 2,337/100,000 deliveries, this is higher than 450,280 and 532 reported from university of Ilorin Teaching Hospital^{4, 5, 6} and lower than the 3,392 reported from Abakaliki⁷. It is equally higher than the national average of 800 and ratios obtained from other developing countries: - Namibia (300), Ghana (540), Gambia (540) and Ethiopia (850)⁸. When compared with what is available in the developed countries, (Sweden 2, Slovakia 3 and Spain 4 per 100,000 births), it is unacceptably high⁸. This overall MMR is most likely less than what it should be, because, maternal deaths in the accident and emergency unit for 2000, 2001 and 2003 were not included in the study due to poor record keeping and industrial disharmony in the centre.

Complete data for the analysis of the case fatality rate was available in only 73 (88%) maternal deaths due to poor record keeping. The true CFR of obstetric emergencies in this institution is therefore higher than the 14% reported from this study. 10 (12%) of maternal deaths in the obstetric and gynaecology wards were not analyzed for CFR due to poor record keeping. Only the 5 (6%) maternal deaths that occurred in the year 2002 in the accident and emergency unit were analyzed. The maternal deaths in this unit for the years 2000, 2001 and 2003 were not analyzed (for MMR and CFR) due to poor record keeping.

The case fatality rate (CFR) gives a better picture of the contribution of direct obstetric complications to the maternal deaths than the MMR. The CFR of 14% is much higher than the maximum international benchmark of 1%. This figure is higher than the 0.84% reported from Morocco, 0.43% reported from Nicaragua and 0.25% reported from Sri Lanka⁹. This figure is also higher than the Benue State average of 8% reported from PATHS EmOC survey¹⁰. The difference from the state figure could be due to the under-reporting in the surveyed facilities and the fact that majority of the surveyed health facilities were not receiving women with complications. The finding from this study was most likely more representative of the quality of EmOC in the State.

A high CFR alone may also indicate high volume of work with patient in poor condition being referred to the facility. For this reason, analysis of caesarean section rate is necessary for better understanding. The recommended caesarean section rate of 5-15% in the UN process indicator relates to the proportion of all caesarean section births in a population⁹. This rate should be higher than 15% for a health facility like FMCM that is the only tertiary health institution in the

state. The caesarean section rate of 10% when compared with the MMR and the CFR is therefore low. A low caesarean section rate and a high CFR and MMR indicate a low quality EmOC facility.

Further understanding of the quality of EmOC in the hospital was shown by the poor availability of drugs. The lack of parenteral antibiotics and parenteral anticonvulsants, absent forceps delivery and the very low vacuum delivery rate shows that FMCM does not qualify as either a basic or a comprehensive EmOC facility by international standards. To become a basic EmOC facility a health facility must perform the first six of the following eight signal functions: parenteral oxytocics, antibiotics, and anticonvulsants, assisted vaginal delivery (vacuum/forceps), manual removal of the placenta, removal of retained products of conception, blood transfusion and caesarean section. A health facility that performs all eight functions is designated as a comprehensive EmOC facility. The fact that doctors, anesthetists, theatre nurses and laboratory scientists do not sleep in the hospital during calls could have contributed to the poor quality EmOC observed in this study because of lack of readiness and responsiveness to the obstetric complications.

In conclusion, the high MMR (2,337/100,000 deliveries), high CFR (over 14%), low caesarean section rate (10%), inadequate and poor staff performance in FMCM despite regular payment of staff salaries indicated poor quality of EmOC and is a call to action.

Quality improvement exercises including criterion based clinical audit of maternal deaths is recommended to better understand issues surrounding this poor quality of EmOC. Urgent steps should be taken to admit patients directly through the gynaecological emergency into the gynecology ward. The creation of obstetrics and gynecology subunit of the records department is highly recommended. The management of the centre needs to be sensitized to this poor quality and the need to take urgent steps to improve staff welfare to reduce industrial disharmony in the centre.

References

1. Maric S., Fama H. Making safe motherhood a reality in West Africa. Using Indicators to programme for results, UNFPA 2002. 3.
2. Patti S., Shire A., Becker J., Mielke E. Cullies V., Pine R. et al. *Emergency Obstetric Care. Leadership Manual for Improving the Quality of Services. Engender Health and The Mailman School of Public Health Columbia University.* Working draft 2002. 7-8.
3. Ernest O.O., Ogunniyi S.O, Onwudiegwu U. Quality assessment of Family Planning Services in Ife/Ijesa administrative Health Zone: Client's Perspective. *Trop J. Obstet. Gynaecol* 2003, 20 (1): 28
4. Adetoro .O.O. Maternal Mortality An 11-year survey of the University Of Ilorin Teaching Hospital (UITH), Ilorin, Nigeria. *Int. J. Obstet. Gynecol.* 1987, 25:93-98
5. Adetoro O.O.; Okwerekwu E.E.; Ogunbode O., Maternal Mortality at Ilorin, Nigeria. *Trop J. Obstet. Gynaecol* 1988, 1:18-21.

6. Aboyceji A.P. Trends in Maternal Mortality in Ilorin, Nigeria. *Trop J. Obstet. Gynaecol* 1998, 15 (1): 15-20.
7. Ibeke P.C., Dijemesi I. Obstetric Indices of Ebonyi State University Teaching Hospital, Abakaliki. Abstracts of the 2003 conference held at Port Harcourt *Trop J. of Obstet Gynaecol* 2003, 20 (1): 32-33.
8. Carol B: The State of the world's children 2004. UNICEF, 2003:130- 132.
9. Bailey P.E. Averting Maternal Death and Disability. Program note: Using UN process indicators to assess needs in emergency obstetric services: Morocco, Nicaragua and Sri Lanka. *Int. J. Gynecol. Obstet.* 2003, 80: 222-230.
10. Ujah AO, Ochejele S. Jogo A., Aida A., Adama O., Heywood A. Et al. *Emergency Obstetric care in Benue State. A Survey of the 100 busiest Maternities.* Partnership for Transforming Health Systems Benue State. 2003.1, 9.