**ORIGINAL RESEARCH ARTICLE**

# An Assessment of Policies and Programs for Reducing Maternal Mortality in Borno State, Nigeria

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## Abstract

The study was designed to identify and document the nature of current policy framework and programs for addressing maternal health in Borno state. In-depth interviews were conducted with key officers of the Borno State Ministry of Health, and available hospital data and other existing documents were reviewed. The results as well as those of the 2008 Nigerian Demographic and Health Survey (DHS), and surveys conducted by the Federal Ministry of Health and the Society of Gynaecology and Obstetrics of Nigeria (SOGON) indicate that Borno has one of the highest maternal mortality ratios in the country (1,600/100,000 live births). Although Borno state government has a policy on free maternal health care, the programme is not officially gazetted; it reaches only a few women; and is poorly funded. Several international development partners are active in the state but are increasingly concerned by the lack of official policies and the inadequate budgetary allocation for addressing the high rate of maternal mortality in the state. We conclude that increased political will is needed to address the inordinately high rate of maternal mortality in Borno State. (*Afr. J. Reprod. Health* 2010; 14[2]: 49-54).

## Résumé

**Evaluation des politiques et des programmes pour la réduction de la mortalité maternelle dans l'état de Borno, Nigéria.** L'étude a été conçue pour identifier et documenter la nature du cadre de la politique et des programmes destinés à s'occuper de la santé maternelle dans l'état de Borno. Nous avons recueilli des interviews en profondeur auprès des responsables clé du ministère de la santé de l'état de Borno et nous avons passé en revue les données hospitalières et d'autres documents. Les résultats aussi bien que ceux de l'Enquête Nigériane de la Santé et de la Démographie de 2008 (ENSD) et les enquêtes menées par le ministère fédéral de la santé et la Société de Gynécologues et d'Obstétriciens de Nigéria (SOGON) montrent que l'état de Borno a des rapports les plus élevés de la mortalité maternelle dans le pays (1.600/100.000 naissances vivantes). Bien que l'état de Borno ait une politique de soins de la santé maternelle gratuit, elle n'a pas encore été publiée à l'Officiel ; cela n'atteint que très peu de femmes et elle n'est pas bien financée. Beaucoup de partenaires de développement internationaux sont actifs dans l'état mais ils s'inquiètent du manque de politiques officielles et de l'insuffisance d'allocation budgétaire pour s'occuper du taux élevé de la mortalité maternelle dans l'état. Nous concluons qu'il faut une volonté politique intensifiée pour s'occuper du taux de mortalité maternelle excessivement élevé dans l'état de Borno (*Afr. J. Reprod. Health* 2010; 14[2]: 49-54).

Key words: Maternal mortality, Borno state, Free maternal health care, northern Nigeria.

## Introduction

In April 2010, the United Nations reported that although substantial progress has been made globally towards meeting the Millennium Development Goals (MDGs), the two goals relating to maternal and child health have lagged behind[1]. Data from the United Nations and the World Bank has identified Nigeria as one of the worst places for a woman to give birth, with women having a one in 13 chance of dying during pregnancy and child birth[2]. It is estimated that about 59,000 women die each year in Nigeria due to pregnancy-related complications, which translates into 144 maternal deaths on a daily basis. In 2003, the average maternal mortality ratio for Nigeria was put at 704/100,000 live births with a range of 165/100,000 in the southwest to 1,549 / 100,000 in the northeast sub-region of the country[3]. As part of its efforts to meet the MDGs, the Nigerian government has formulated and approved several policies and programmes in the health sector[4] and has increased the health budget from 1.7% in 1999 to 5.6% of the total budget in 2006[5]. This is still a far

cry from the 15% budgetary allocation to health agreed to by African nations in the Abuja declaration of 2001[6]. Five years to the target of the MDGs, Nigeria is still among the 38 African nations that made no significant progress in achieving the MDGs[1].

According to the 2008 Nigerian Demographic and Health Survey (NDHS), Nigeria's maternal mortality ratio over the past five years ranged from 475 to 615 per 100,000 live births with an average of 545/100,000[7]. There were some regional variations in the maternal mortality ratios with the north-western and north eastern regions having the worst figures. However, a hospital survey conducted by the Society of Gynaecology and Obstetrics of Nigeria (SOGON) reported a high maternal mortality ratio of 1,549 maternal deaths per 100,000 live births[8] for Borno State.

Thus, it is increasingly becoming evident that Borno state probably has the highest maternal mortality ratio in the country. The reported institutional estimates in the state range from 900/100,000 to 1,600/100,000 live births[9,10]. Over the past 10 years, Eclampsia has repeatedly turned up in several reviews as being the leading cause of maternal mortality in Borno state, accounting for 50-60% of cases of maternal deaths. This is followed by obstructed labour, sepsis and obstetric haemorrhage in that order[10]. These are preventable causes and reflect the poor status of reproductive health facilities in the state.

The objective of this study was to identify and document the existing policy framework and programs for addressing the high rate of maternal mortality in Borno state. This study assesses the political priority given to maternal health and the reduction of maternal mortality in Borno state compared to other health and development-related issues. We believe that the results of the study will be useful for designing a program for improving maternal health and reducing maternal mortality in Borno state.

## Materials and Methods

### *Study area*

Lying within latitudes 11° to 15° and longitude 10° and 25° N, Borno state which has an area of 69,436 km$^2$ is the largest state in the federation in terms of land mass. Located in the north east corner of Nigeria, the state occupies the greater part of the Chad basin and shares borders with the Republic of Niger to the north, Chad to the northeast and Cameroon to the east. Within the country, its neighbors are Adamawa state to the south, Yobe state to the west, and Gombe to the southwest. Based on the 2006 census, Borno state has a population of 4,151,193 people consisting of 2,161,157 males and 1,990,036 females[11].

Borno state has a climate which is hot and dry for the greater part of the year, with a short rainy season from June to September in the northern part and May to October in the southern part of the state. The state has two major vegetation zones: Sahel savannah in the north with severe desert encroachment, and the Sudan savannah in the south consisting of scrubby vegetation interspersed with tall tree woodlands.

Borno state is pluralistic in ethnic composition with about 30 autonomous languages. The major tribes are the Kanuri in the north and the Bura / Babur, Marghi and Gwoza to the south. Maiduguri the capital city of Borno state is accessible by road, air and railway.

### *Data collection and analysis*

The major source of data for the study was in-depth interviews with key officers of the Borno state Ministry of Health. A total of 3 interviews were conducted for the study. After approval by the Honorable Commissioner for Health, interviews were held with the Permanent Secretary, Ministry of Health, the Director of Information and Statistics, and the State Coordinator of the Fatima Ali Sheriff free maternal Health care programme.

Documentary reviews were then undertaken to corroborate information from the in-depth interviews as well as supplying additional information. In doing this, documents such as the Borno state budget 2008/2009, Nigeria Demographic and Health Survey 2003 and 2008 and the official gazette on the 2006 Nigeria census were reviewed[3,7,11,12,13]. These documents were reviewed for data relating to maternal health in Borno state. The tape recordings of the interviews were transcribed and typed with a standard word processing package. The relevant information extracted from the documents was employed as corroborative evidence to the information collected during interviews.

## Results

### *Current state of maternal health in Borno State*

The 2008 Nigeria DHS puts the maternal mortality ratio in the Northeast sub-region of Nigeria as the second worst after the Northwest. Nationally, an average of 58% of pregnant women attend antenatal care (ANC). By contrast, only 43% of mothers in the northeast region attend ANC and worse still, only 12.8% of pregnant mothers in this region, deliver in a health facility.

A recent survey by the Federal Ministry of Health (FMOH) as well as a formative research carried out by the Society of Gynecology and Obstetrics of Nigeria (SOGON) estimated the maternal mortality ratio in Borno state to be 1,600/100,000 and 1,549 / 100,000 live births respectively[8,14]. The same sur-

**Table 1.** Borno state population per 2006 census.

| LGA | Population | Males | Females |
|---|---|---|---|
| Mobbar | 116654 | 60116 | 56538 |
| Abadam | 100180 | 52030 | 48150 |
| Kukawa | 203864 | 106371 | 97493 |
| Guzamala | 95648 | 49225 | 46423 |
| Gubio | 152778 | 79234 | 73544 |
| Magumeri | 140231 | 71396 | 68835 |
| Kaga | 90015 | 46833 | 43182 |
| Konduga | 156564 | 79208 | 77356 |
| Maiduguri | 521492 | 290449 | 231043 |
| Jere | 211204 | 108606 | 102598 |
| Nganzai | 99799 | 52650 | 47149 |
| Monguno | 109851 | 56178 | 53673 |
| Marte | 129370 | 65727 | 63643 |
| Mafa | 103518 | 52748 | 50770 |
| Dikwa | 105909 | 54889 | 51020 |
| Ngala | 237071 | 126696 | 110375 |
| Kalabalge | 60797 | 30551 | 30246 |
| Bama | 269986 | 136502 | 133484 |
| Gwoza | 276312 | 143800 | 132512 |
| Damboa | 231573 | 122337 | 109236 |
| Askira/Uba | 138091 | 69056 | 69035 |
| Chibok | 66105 | 35664 | 30441 |
| Biu | 176072 | 90232 | 85840 |
| Kwayakusar | 56500 | 29065 | 27435 |
| Bayo | 78978 | 39738 | 39240 |
| Shani | 102317 | 51861 | 50456 |
| Hawul | 12031 | 59995 | 60319 |
| **TOTAL** | **4151193** | **2161157** | **1990036** |

veys estimated that of the 170 health facilities in Borno state, only 2.9% were qualified to offer Basic Emergency Obstetric Care (BEOC), with all situated in the state capital, away from rural communities where the majority of pregnant mothers reside. With a total population of 4.1 million people (Table 1) only 42 medical doctors are currently in the state civil service. Over 70% of these doctors are resident in the state capital, away from the rural population (Table 2). The true picture may be worse as the largest hospital in the state, the state specialist hospital, has been closed for over a year and half undergoing renovation.

*Policies and programmes on maternal health*

Borno state has a policy on the promotion of maternal and child health. This is called Fatima Ali Sheriff free maternal health care, named after one of the wives of the Executive Governor of the state, Ali Modu Sheriff. According to the coordinator of the programme, a consultant Obstetrician and Gynecologist, the program was designed to provide free medical care to all pregnant women in the state. The package includes free drugs during the antenatal period, free hospital delivery including caesarean section and free treatment for intercurrent illnesses. The program was given priority attention by the State government, which explained why the program was placed directly under the Governor's office and supervised by the First Lady. However, only minimal funding has been provided for the program so far. In 2007, the sum of two hundred million naira ($ 1,333,333) was budgeted for the program but only eight million naira ($ 53,333) was actually released. In 2008, the same amount of two hundred million naira ($ 1,333,333) was budgeted but only twenty million naira ($ 133,334) was disbursed for the program. Thus, the program is characterized by severe shortages in resources needed to promote maternal health and reduce maternal mortality in the state. Although the same amount was budgeted for the programme in 2009 (Table 3), the programme had died by the beginning of that year.

It appears the program is only a political gimmick aimed at aligning with the current wave of declaration for free maternal health by state governments across the country. There does not appear to be any sincerity on the part of government to execute the program with purposefulness and tenacity. As earlier stated, follow-up assessment of reproductive health facilities in the state showed continued deterioration of the capacity of these health facilities to cope with antenatal care and basic obstetric emergencies. So far, there is no legislation in the state on maternal health.

*Available programmes relating to maternal health*

Several development partners are actively engaged in maternal health programmes in Borno state. UNFPA continues to support the safe motherhood programme while the Harvard PEPFAR programme is collaborating with several hospitals in Borno state to offer comprehensive services in preventing mother-to-child transmission of the human immunodeficiency virus. Pathfinder International assists in family planning services in the state. The IPAS is perhaps the only development partner that is directly involved in reducing maternal mortality by supporting post abortion care services.

*Impact of the programmes relating to reduction of maternal mortality*

All patients interviewed in the reproductive health facilities offering family planning services, post abortion care and PMTCT services were satisfied with the quality of care given. All these facilities are assisted (or indeed managed) by non-governmental organizations or development partners. Since government participation has been that of providing space, the sustainability of such programmes is not certain.

**Table 2.** Local government areas with resident doctors in Borno state.

| LGA | No. of doctors | No. of N/Mid | No. of CHEWS | No. of Lab. tech | No. of Pharm | Total Population |
|---|---|---|---|---|---|---|
| MMC | 32 | 449 | 37 | 62 | 4 | 231,043 |
| Biu | 2 | 43 | 10 | 5 | 2 | 85,840 |
| A/Uba | 2 | 41 | 8 | 4 | 1 | 69,035 |
| Bama | 1 | 35 | 7 | 3 | 1 | 133,484 |
| Gwoza | 1 | 27 | 6 | 7 | 1 | 132,512 |
| Mobbar | 1 | 8 | 5 | 3 | 1 | 56,538 |
| Monguno | 1 | 23 | 4 | 2 | 0 | 53,673 |
| Dikwa | 1 | 9 | 10 | 4 | 0 | 51,020 |
| Konduga | 1 | 6 | 3 | 2 | 0 | 77,356 |
| **TOTAL** | **42** | **641** | **90** | **92** | **10** | |

LGA=local government area
MMC=Maiduguri metropolitan council

**Table 3.** Budgetary allocation for maternal health compared to other programmes in Borno state, 2008 and 2009.

| Sub-head | Programme | Amount N 2008 | Amount N 2009 |
|---|---|---|---|
| 20207 | Maternal and child health care | 200,000,000 | 200,000,000 |
| 20205 | Epidemiological services | 300,000,000 | 250,000,000 |
| 20213 | Health system fund | 50,000,000 | 50,000,000 |
| 20214 | HIV/AIDS control | 30,000,000 | 150,000,000 |
| 20215 | TB/Leprosy control | 15,000,000 | 20,000,000 |
| 20217 | Immunization programmes | 50,000,000 | 50,000,000 |
| 20224 | Guinea worm control programme | 10,000,000 | 20,000,000 |
| 20225 | Roll back malaria programme | 30,000,000 | 150,000,000 |
| 20226 | Schistosomiasis control programme | 10,000,000 | 10,000,000 |
| 20233 | Oncocerciasis control programme | 10,000,000 | 15,000,000 |

The pilot facilities offering free maternal care services received increased attendance by pregnant women at inception of the programme. Unfortunately, attendance quickly declined as the drugs and other supplies were not forth coming (Table 4). At inception of the programme, antenatal clinic attendance stood at 175,095 in the pilot centers with an impressive maternal mortality ratio of 446/100,000 live births (Table 4). By the end of its second year, antenatal clinic attendance had dropped to 53,223 and the maternal mortality ratio going up to 656 / 100,000 live births. As at the time of writing, the programme can be said to have died a natural death.

## Discussion

This study has examined the current state of maternal health in Borno State and nature of the policies and programmes of the state government in this area of health care. The maternal mortality of 1,600 /100,000 live births is far above the national average of 545/100,000 live births[3,7,10]. The leading causes of these maternal deaths were eclampsia, sepsis, obstructed labour and its Sequelae and obstetric haemorrhage[8,10]. With a doctor to patient ratio of about 1:100,000 and only 2.9% of the health facilities able to provide basic emergency obstetric care and still less than that proportion offering 24 hour service, Borno state is indeed one of the most dangerous places for a pregnant woman to give birth in the world.

In Borno state, where the maternal mortality ratio is perhaps higher than anywhere else in the country, maternal health and the reduction of maternal mortality programmes are essentially NGO business. The only declaration by the state government, the Fatima Ali Sheriff free maternal care programme was launched in 2007 during the pre-election political campaigns. Although huge sums of money were budgeted for the programme, little was released to implement the programme. As a result, it died a natural death.

However there are some popular programmes on maternal health in the state that are run by non-governmental organizations. Among them are the prevention of mother-to-child transmission (PMTCT) of HIV programmes which are largely run in the state by the Harvard PEPFAR project, the safe

**Table 4.** Statistics of the Fatima Ali Sheriff Free maternal care scheme, 2007/2008.

| Facility | ANC attendance | Deliveries | Caesarean sections | PNC attendance | Maternal Deaths |
|---|---|---|---|---|---|
| **2007** | | | | | |
| SSH | 31,173 | 7,351 | 382 | 1,643 | 29 |
| GH Biu | 11,824 | 1,601 | 135 | 198 | 9 |
| GH Monguno | 2,449 | 372 | 0 | 232 | 10 |
| Yerwa clinic | 118,999 | 1,650 | 0 | 10,493 | 0 |
| GH Gwoza | 9,777 | 906 | 0 | 745 | 5 |
| GH Mobar | 1,821 | 113 | 0 | 685 | 0 |
| **Total** | **175,095** | **11,893** | **459** | **13,963** | **53*** |
| **2008** | | | | | |
| SSH | 15,104 | 3,167 | 167 | 622 | 23 |
| GH Biu | 6,741 | 946 | 45 | 153 | 10 |
| GH Monguno | 950 | 147 | 0 | 17 | 5 |
| Yerwa clinic | 23,516 | 495 | 0 | 10,050 | 1 |
| GH Gwoza | 6,026 | 528 | 0 | 729 | 0 |
| GH Mobar | 856 | 76 | 0 | 437 | 0 |
| **Total** | **53,223** | **5,334** | **131** | **12,003** | **35*** |

SSH = state specialist hospital, Maiduguri
GH = general hospital

- Maternal mortality ratio for 2007 = 446/100,000
- Maternal mortality ratio for 2008 = 656/100,000

motherhood programme run by the United Nations population Fund (UNFPA) as well as the post abortion care programme being run by the Ipas. Unfortunately, because the participation of the government in these programmes is often low key, they do not adequately cover the entire population and tend not to be sustainable. Local non-governmental organizations (NGOs) only choose sites they can adequately manage and collect the data they need. Most of these NGOs do not specifically focus on the reduction of maternal mortality.

There is also inadequate trained manpower in Borno state to adequately cater for the needs of pregnant women. Due to frequent strikes by health workers and the exodus of medical doctors from the state, the quality of antenatal care is declining and maternal mortality on the increase. Although SOGON has been able to negotiate the mandatory one year posting of student midwives at the end of their training to work in their local governments, the policy does not work in the state because the local governments have refused to pay the monthly ten thousand naira allowance to the midwives. By the end of 2009, only four local governments in Borno state were favorably responding to this arrangement.

In Nigeria it is desired that for every 1000 pregnant women, there are 100 obstetricians[15]. With only two obstetricians in the Borno state civil service, the standard of care received by pregnant women in the state is far from ideal. This leads to overburdening of the only functional public facility in the state, the university of Maiduguri teaching hospital. As at the time of writing, there are only 42 resident doctors in the Borno state civil service, serving in only 10 local government areas. Seventy-six percent of these doctors live in Maiduguri, the state capital. Similarly, 70% of the nurse/midwives in the state civil service are also resident in Maiduguri metropolis. This situation breeds the patronage of quacks, traditional birth attendants and substandard private health facilities in the rural areas. Previous studies have documented that consumer satisfaction with health care services in Africa is one of the most important factors determining the utilization of services[16,17].

This unfair distribution of medical personnel in Borno state civil service is also reflected in the private sector. All private maternities are situated inside Maiduguri Township. Yet the majority of the pregnant mothers are situated in the rural areas. Worse still, these rural women who constitute the majority of mothers are also the poor, uneducated and less knowledgeable people who are left to die in their natural duty to procreate. With poor condition of service in the rural areas and poor pay package in the state civil service compared to the federal civil service, the inequity in health care in the rural and urban areas is likely to persist for long. This has been shown to be a common trend in developing countries[18].

There is no doubt that in order to meet the MDGs, especially goals number 4 and 5 on child and maternal health respectively, the Borno state

government needs to take drastic actions in the health sector to turn things around for the good of the populace. The health sector needs to be adequately funded and proper coordination of the three tiers of government promoted. Funds budgeted for the health sector should be used for the purpose for which it was intended.

There are adequate policies and programmes in this country to improve maternal and child health. Borno state government should show serious commitment to implement some of these programmes to reduce maternal mortality in the state. If the funds budgeted for free maternal care is actually injected into the programme, the impact will be felt across the entire state.

The welfare of the health workers should be improved to attract skilled manpower into the state civil service. The medical salary system should be reviewed upwards and the mandatory one year posting of final year midwives should be encouraged at the local government level. This will go a long way in improving the quality of antenatal care in the rural areas. Improving the living condition in the rural areas is also important.

Legislation at the state level to back up government policies should be encouraged. This will ensure the continuity of government programmes in successive governments even under different political parties.

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