

*Full Length Research Paper*

# Curbing maternal and child mortality: The Nigerian experience

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The paper examined the unacceptably high maternal and child mortality in Africa using Nigeria as a case study. Place and duration of study were the Department of Human Kinetics and Health Education, University of Calabar, and Department of Public Health Nursing, College of Health Technology, Calabar, Nigeria, between February, 2010 and April, 2011. The opportunity created by the presence of over 300 Nurses at the 2010 October 3rd to 8th, 8<sup>th</sup> African Regional Conference organised by Nurses Christian Fellowship International (NCFI) in Ghana, was utilized to extensively compare notes and discuss salient issues contained in our reviewed work. Existing research works in prints and electronic among others were used in the search and collation of facts and figures contained in the study. Theme of the conference was: Reforming Nursing and Midwifery Care in Africa. Nigeria is the most populous Black Nation and has the maternal mortality rate of 280 to 1150 per 100,000 live births (Onwumere, 2010). Maternal and child mortality is closely linked to poverty with malnutrition as an underlying contributor in over half of these deaths. Factors associated with these problems include, poor socio-economic development, weak health care system and low socio-cultural barriers to care utilization (Ibeh, 2008). The persistent high rate of maternal and child mortality in the country negates the achievement of the 4th and 5th Millennium Development Goals (MDGs). Nigeria, which constitutes just 1% of the world's population, accounts for 10% of the world's maternal and under-5 mortality rates. Factors associated with these problems include, poor socio-economic development, weak health care system and low socio-cultural barriers to care utilization. Key interventions identified for curbing these problems include, care during pregnancy, birth and post partum supports in addition to approved child survival intervention.

**Key words:** Curbing, maternal, child, mortality, Nigerian experience.

## INTRODUCTION

Maternal and Child mortality is not an uncommon event in several parts of the developing world. Mothers and children are at highest risk for disease and death. While motherhood is often a positive and fulfilling experience, for too many women, it is associated with ill-health and even death (Olatoye, 2009). The death of a woman during pregnancy, labor or puerperium is a tragedy that carries a huge burden of grief and pain, and has been described as a major public health problem in developing

countries. Women have an enormous impact on their families' welfare. Deaths of infants/children under five are peculiar and closely related to maternal health. One million children die each year because their mother has died, and the risk of death of children less than five years doubles if mothers die in childbirth. More than 25,000 children die everyday and every minute a woman dies in child birth. Worldwide, every year about 500,000 women die due to child birth and over 9 million children under age five die mostly from preventable and treatable diseases (WHO, 2003).

Available evidence indicates that Africa accounts for the highest burden of mortality among women and children in the world (Udofia and Okonofua, 2008; Prata

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**Table 1.** Estimate of the top and bottom five countries with the highest and lowest reported infant mortality rates.

Rank	Country	Infant mortality rate (Deaths/1,000 live births)
1	Angola	180.21
2	Sierra Leone	154.43
3	Afghanistan	151.95
4	Liberia	138.24
5	Niger	116.66
219	Hong Kong	2.92
220	Japan	2.79
221	Sweden	2.75
222	Bermuda	2.46
223	Singapore	2.31

Source: Wikipedia, 2010.

et al., 2008). This unhealthy trend has become a matter of great concern, calling for concerted approach for all and sundry. The Millennium Development Goals (MDGs) by the global community focuses attention, resources, and action on improving the well-being of all peoples. Two of the goals (MDGs 4 and 5) were to reduce the childhood mortality rate and maternal mortality ratio, by two-thirds and three quarters (75%), respectively between 1990 and 2015. It is expected that decline in child/maternal mortality must accelerate substantially in the period to 2015, if any country is to reach these goals.

Nigeria is the most populous Black Country in Africa with 140 million people including 75 million children (Ogbonaya and Aminu, 2009). The child and maternal mortality rate of this country is very significant and has implications for the attainment of the MDGs. It has been noted that Nigeria is lagging behind in achieving universal coverage of key maternal and child health intervention and will unlikely meet the target of the MDGs. According to UNICEF Executive Director, Ann Veneman, "midway to 2015 deadline for MDGs, Nigeria continues to record unacceptably high maternal, newborn and child mortality". Nigeria ranks as one of the 13 countries in the world with the highest maternal mortality rate and is still not listed among the 10 countries seen to have made rapid progress to meet the goals.

## MATERIALS AND METHODS

### The extent of the problem globally

World Health Organization (WHO) 2006, defines maternal death as the death of women while pregnant or within 42 days of termination of pregnancy irrespective of the duration and site of the pregnancy from any cause related to, or aggravated by the pregnancy or its management but not from accidental or incidental causes. Child mortality on the other hand, is the death of a child under five years, while infant mortality is the death of a child under 1 year.

Maternal mortality is a multi-dimensional problem which does not only affect the family involved but has a great effect on the society

as a whole. When a mother dies, the children's chances of reaching adult life is slim. This is majorly due to lack of everyday care and security. The young children may have to take care of themselves and this may in turn affect their school attendance. Lack of proper education may in turn weaken the child's chances of reaching better life standards.

Monitoring maternal mortality is difficult due to poor reporting and lack of proper methods to measure actual death rates. Estimating the real figure is difficult as only 31% women deliver in health facilities (Lindros and Lukkainen, 2004). The gap of maternal deaths between rich and poor countries is wide with 99% of these deaths occurring in the developing world. Out of the 49 countries which record highest maternal deaths, 34 of these countries are in Sub – Saharan Africa, where 1 woman in 16 dies from pregnancy or childbirth compared to 1 in 2800 in the developing world (Amankwah, 2009).

According to UNICEF 2006 report, every year nearly 10 million children under five die globally. About 4 million newborns (40% of under-five deaths) die in the first four weeks of life. Although, Africa accounts for only 22% of births globally, half of the 10 million child deaths annually occur in the continent. Africa is the only continent that has seen rising numbers of deaths among children under five since the 1970s. It is estimated that about 4.6 million (46%) under five deaths is in Africa and 98% of these deaths occur only across 42 developing countries. The greatest number of under-five deaths in the world occurs in Sierra Leone, Angola and Afghanistan where between 257 and 270 children die for every 1000 live births. The lowest death rate in the developing world occur in Cuba, Sri Lanka and Syria, where between 7 to 14 children die for every 1000 live births (Global Action for Children, 2008). The World Factbook 2009 estimate of the top and bottom five countries with the highest and lowest reported infant mortality rates are shown in Table1.

UN estimates that one in every six children dies from childhood related illness before age five. Under-five mortality in Nigeria is estimated at 191 per 1000 live births. Almost one million children die in Nigeria more than any other country in Africa, largely from preventable diseases.

## STATE OF MATERNAL, NEW BORN AND CHILD HEALTH IN NIGERIA

Universally childbirth is an event that attracts celebration, but this is not so for many women who experience childbirth as suffering and tragedy that may end in death. The state of maternal, newborn and child health is an important indicator of a nation's health care delivery system and the level of the society's development. Previous efforts to meet the MDGs on the reduction of maternal and child mortality in Nigeria have shown only marginal reductions in the last five years, making the MDGs targets by 2015 clearly unachievable using current strategies alone (Mid Point Assessment Overview, MDGs Nigeria, 2008).

Nigeria has a population of 140 million people with women of child bearing age constituting about 31 million and children less than five years of age constituting 28 million (FMOH, NPHCDA, 2009; National Bureau of statistics, 2010). Women of child bearing age and children under five years of age therefore constitute a significant percentage of the nation's population. Nigeria, which constitutes just 1% of the world population, accounts for 10% of the worlds maternal and under-five mortality rates. Nigeria ranks second in the world, after India, in the scale of maternal mortality with the rate of 800 deaths per 100000 live births \*(Akowe, 2009). Annually, an estimated 52,900 Nigerian women die from pregnancy related complications out of a total of 529,000 global maternal deaths. A woman's chance of dying from pregnancy and childbirth in Nigeria is 1 in 13, compared with 1 in 35 in Ghana and 1 in 2800 in develop countries, and only about 40% of deliveries are attended to by skilled birth attendants.

According to the WHO/United Nations Children Fund (UNICEF), in 1995, Nigeria had the third highest number of maternal deaths in the world (approximately 45000 deaths). By the year 2000, for every 100,000 live births, about 800 women died in the process of child birth. Out of the 27 million Nigerian women of reproductive age back then about 2 million did not survive either pregnancy or childbirth. In 2008, according to UN report, the figure stood at between 1000 and 1500 deaths per 100,000 live births. The State of the World Children Report 2009 stated that 1 out of 9 global maternal deaths occurred in Nigeria.

Till date, Nigeria is second on maternal mortality rate in the world with about 144 girls and women dying everyday from complication of pregnancy and child birth. 1 in every 18 women die giving birth compared to 1 in 4800 in the US (Pitterson, 2010; Daily Independent, 2010). According to the survey conducted in February 2010, the record stands at between 165 per 100,000 live births in the South West and 1549 per 100,000 live births in the North East (Onumere, 2010).

An estimated 250,000 newborns die annually in Nigeria, the neonatal mortality rate is 48 per 1000 live births (FMOH and NPHCDA, 2009, Shettima, 2007; Amankwah, 2009). Just as with maternal mortality, the neonatal mortality rate in Nigeria has wide geographical variation, the highest rates are seen in the North-East and Northwest Zones of the country, the lowest rates noticed in the South-West and South-East. It is sad to note that, most of the causes of these deaths are either preventable or treatable.

## CAUSES OF MATERNAL AND CHILD MORTALITY

Without healthy mothers, you cannot have healthy children. The issue of maternal health actually begins with the conception of the girl child in the mother's womb. The health of the baby within the mother, the circumstances and events of her birth, her early infancy, childhood, adolescence, early adulthood, her experiences as regards nutrition, child care, education, physical, mental, intellectual and emotional development; all have vital and interdependent roles to play in what we term maternal health (Sariki, 2008). Also children who are raised in physical and emotional nurturing environment will be more likely to survive and less likely to succumb to illness and disease.

UNICEF observes that child and maternal mortality have many triggers, both direct and indirect. Poorly funded and culturally inappropriate health and nutrition services, food insecurity, inaccurate feeding practices and lack of hygiene are direct causes of mortality in both children and mothers. The indirect causes may be less obvious externally, but play just as large a role in mortality statistics. Female illiteracy adversely affects maternal and child survival rates and is also linked to early pregnancy. In many countries, especially where child marriage is prevalent, the lack of primary education and lack of access to healthcare contribute significantly to child and maternal mortality statistics. UNICEF also notes that discrimination and exclusion of access to health and nutrition services due to poverty, geographic and political marginalization are factors in mortality rates as well (Saraki, 2008).

The major reported causes of maternal deaths in developing world are:

- i. Severe maternal bleeding
- ii. Infections
- iii. Obstructed or prolonged labor
- iv. Unsafe abortion
- v. Hypertensive disorders of pregnancy especially eclampsia (Marchie and Anyanwu, 2009).

Hemorrhage, sepsis, toxemia and complications from abortion account for 62% of maternal deaths in Nigeria (Lindros and Lukkainen, 2004). According to Olatoye (2009), North West has the highest maternal mortality rate, seconded by North-East. Death

from post partum hemorrhage (PPH) ranges between 23% and 44% of total maternal deaths especially in the Northern States. The ratio of women dying from PPH is 1 in 6 in the North East and North West as against 1 in 18 between South West and South East geopolitical zones. In percentage terms generally, the records read as follows:

Eclampsia - 27%  
 PPH - 25%  
 Infection – 15%  
 Unsafe abortion – 13%  
 Other causes – 20%

Other health issues which affect women chances of healthy livelihood in the pre-natal and post partum period are high blood pressure, cancer, heart conditions and other non-communicable diseases. HIV/AIDS is an additional new concern for maternal/child health survival. According to Amankwah, 2009, in Ghana:

Bleeding – 17%  
 Hypertension – 19%  
 Anemia – 12%  
 Unsafe abortion – 11%  
 Infections – 10%  
 Obstructed labor – 7%  
 Other causes – 24%

The underlying factor of most maternal deaths is ignorance and apathy by women and the society in general. Most women ignore early warning signs due to lack of adequate knowledge and information about danger signals during pregnancy and labor and so delay to seek care. Also, adequate preparation for any emergency before, during and after delivery is also lacking.

Individual characteristics of mothers found to influence maternal deaths include maternal age, educational attainment, socio-economic status and antenatal attendance. Poor socio-economic development, weak health care system and socio - cultural barriers to care utilization are also contributory.

Socio-cultural variables in the prediction of maternal mortality are thus explained

### Early marriage

Early marriage accounts for about 23% of maternal mortality due to severe hemorrhage resulting from obstructed and prolonged labor. The narrow pelvis of these women may also result to fistula and often time still births.

### Poor family planning practice

Unsafe abortions accounts for at least 13% of all maternal deaths. If people are not aware of good contraceptive methods, there will be a lot of unwanted pregnancies among the young age group. These most often resort to unsafe abortion with its resultant infections, hemorrhage and injuries to the cervix and uterus.

### Female genital mutilation (FGM)

This is a major indirect cause of maternal mortality in Nigeria. It is a risk factor for obstructed labor. Pains, infections and hemorrhage result from FGM, as well as the risk of tetanus and even HIV infections. Problem following FGM is that scar tissue stretches poorly in child birth leading to perineal tear and hemorrhage which also accounts for maternal deaths due to inadequate emergency obstetric care.

### **Inadequate obstetric and post partum care**

About 69% of women still give birth in a traditional setting either at home or in a church. Only 30% of people in the rural areas have access to health care within 4 km distance. The same issue is applicable to people in the urban setting (Lindros and Lawkkainen, 2004). Most attendants of these births in the churches are unskilled.

### **Educational attainment of women**

Female illiteracy adversely affects maternal and child survival rates and is also linked to early pregnancy. The lack of primary education and lack of access to health care contribute significantly to child and maternal mortality statistics. Women who complete secondary education are more likely to delay pregnancy, receive prenatal and post natal care and have their birth attended to by qualified medical personnel.

### **Child death**

This in itself is a risk factor for maternal death in the sense that when a mother loses a child at birth, she would want to get pregnant almost immediately not weighing the risk involved.

Also included here are: women decision making power, economic status and access to health care services, food restriction and taboos. Poverty and ignorance also play a part as many families faced with challenges of meeting their basic needs also lack adequate resources for taking care of their health challenges.

On the average, 70% of child deaths in Africa are attributed to a few mainly preventable causes such as acute respiratory infections, diarrhoea, malaria, measles, malnutrition and neonatal conditions which include suffocation, prematurity and low birth occurring singly or in combination. More children die in Nigeria from these simple preventable and curable health conditions. Malaria alone accounts for about 24% of child deaths annually in the country. More than one million children die annually in the country before their fifth birthday with malnutrition as the underlying cause for more than 50% of these mortalities.

According to UNICEF recent demographic and health survey results, exclusive breastfeeding rate has declined by 3% as compared to 1990 to 2003 when considerable progress was made from 1 to over 17%. Nigeria has a poor nutritional indices which indicate 14% low birth weight, 13% exclusive breastfeeding, 14% stunting and 27% underweight (Obannaya and Aminu, 2009). Nigeria comes third after India and China in the world list of undernourished children and is currently one of the two African countries listed among the twenty responsible for the 80% of global malnutrition, particularly in the Northern region of the country (UNICEF, 2009). Erroneous beliefs informed by ignorance hinder appropriate care for such babies. In most instances, it is considered that the malnourished babies are being dealt with by strange gods hence time is spent to sacrifice to the gods while the condition of the affected babies worsens. Besides these, lack of essential health services, inadequate access to clean water and lack of basic sanitation contribute to high rate of child mortality. Nigeria is also listed among the four polio endemic countries in the world and accounted for 85% of all cases in Africa.

### **KEY INTERVENTIONS TO CURBING MATERNAL AND CHILD MORTALITY**

UNICEF noted that progress has been made in reducing child deaths in every region of the world over the past two

decades according to the target of the global community as expressed in the MDGs. Three regions: Latin America and the Caribbean, East Asia and the Pacific, Central and Eastern Europe, have reduced children mortality substantially. Regions that are not on track to meeting the fourth Millennium Development Goal include the Middle East and Africa.

### **Internationally recommended intervention measures**

Reducing maternal and child mortality needs a concerted effort that must involve all and sundry. Some notable key interventions that have proved successful in curbing maternal and child mortality globally include:

#### ***Child survival strategies***

Child survival is a field of public health concerned with reducing child mortality. Child survival interventions are designed to address the most common causes of the estimated ten million child deaths that occur each year including diarrhoea, pneumonia, malaria and neonatal conditions. The programs are inexpensive, basic interventions that save the lives of children under five from the leading causes of child death and promote healthy and productive families and communities. Some of these programs as indicated by 'State of the World' are:

**Mosquito prevention and treatment:** In sub-Saharan Africa, one in six deaths is caused by malaria. The use of insecticide treated nets (ITNs) and anti-malarial drugs are essential and can reduce the incidence. Although the cost of these are minimal, only eight percent of children under five in Sub-Saharan Africa sleep under treated nets and only one in three children are treated with anti-malarial drugs (Intermittent Preventive Treatment – IPT).

**Immunizations:** There is a great need to scale up immunization of children. Immunizing children against vaccines-preventable diseases before the first year of life is life saving. Despite significant progress in immunizing children, a significant percentage of children still do not receive the complete regimen of vaccinations for their first year. 24 million children - almost 20% of all children born in 2007 - did not receive the complete regimen of vaccinations for their first year (State of the World Mother, 2008). According to Shettima (2007), Zambia's record on immunization stands as one of the best in the region with polio completely eliminated, maternal and neonatal tetanus eradicated and measles on course of being eradicated. The report also noted a scaling up of the Prevention of Mother to Child Transmission (PMCT). In some countries currently, pneumococcal and rotavirus vaccines are now available and prevent the leading

cause of the two main child killers, namely; pneumonia and diarrhea.

**Vitamin A:** supplements given two to three times per year can prevent blindness and lower the risk for death from diarrhea, malaria and measles. These capsules are inexpensive, yet 28% of children in poor countries are not receiving this treatment.

**Promotion of breastfeeding:** Babies not exclusively breastfed for the first six months of life are at an elevated risk for under-nutrition and disease. Exclusive breastfeeding for the first six months has the capability to prevent 13% of all under five deaths in developing countries.

**Prenatal care, skilled care during childbirth, postnatal Care:** 61% of maternal deaths occur in the first six weeks after birth, and nearly half of those occur in the first day after delivery. Postnatal care costs half the amount of skilled care during childbirth and has the potential to save 20 to 40% of newborns' lives.

Other commendable interventions are:

1. Promotion of newborn care: Immunizing mothers against tetanus, ensuring clean delivery practices in a hygienic birth environment, drying and wrapping the baby immediately after birth, providing necessary warmth, promoting immediate and continual breastfeeding, immunization and treatment of infections with antibiotics.
2. Improvement in public health services are essential including safe water and better sanitation can reduce childhood infections and diarrhea.
3. Education for the girl child and mothers will reduce the mortality rate of both mother and child. Women who have completed their secondary education are more likely to delay pregnancy, receive prenatal and postnatal care, and have their births attended by qualified medical practitioners. Children born to these women are more likely to receive all the necessary childhood vaccinations, be taken to health care facilities when they are sick and stay healthier than children born to women without formal education.
4. Focused ante-natal care: An approach to ANC that emphasizes evidence based goal oriented action and family centered care, quality rather than quantity of visits and care by a skilled provider. WHO recommends at least four antenatal visits in a normal pregnancy. More visits can be arranged in an abnormal situation. ANC increases a mother's chances to stay alive and give birth to a healthy baby. During this period, an opportunity to recognize mothers at risk is possible and lethal complications avoided. Also in ANC, screening for STDs especially HIV infections are done thereby giving the baby a chance to avoid contagion by PMCT (through ARV). 1st visit - 12 to 16 weeks; 2nd visit - 20 to 24 weeks; 3rd visit - 28 to 38 weeks; 4th visit - 36 to 40

weeks; during the visits, information on birth preparedness and emergency readiness should be properly provided. Such information includes:

- i. Proper nutrition: Adequate nutrition for pregnant mothers is necessary for the nourishment of the babies from the womb.
- ii. Family planning: Family planning to cut down on family size and proper spacing which gives enough time for the mother to fully recover and the young baby to grow and become strong before another pregnancy.
- iii. Community participation: Community participation in integrated health care services to ensure holistic primary health care.
- iv. Skilled care during pregnancy, childbirth and post partum (first one month after birth) and post abortion care services.
- v. Prevention of mother to child transmission (PMCT) of HIV and management of childhood illnesses.
- vi. Use of misoprostol, a proven uterotonic, in the control of post partum hemorrhage (PPH) which accounts for an estimated 25% of maternal mortality and is a major cause of post partum disability in sub-Saharan Africa. Misoprostol is an inexpensive tablet, easy to store, stable in field conditions and has an excellent safety profile with multiple routes of administration (orally, rectally, and vaginally). It was initially approved by the US Food and Drug Administration (FDA) in 1988 for oral administration for the prevention and treatment of peptic ulcer (B-Lynch et al., 2006). WHO has recommended that in the absence of active management of third stage of labor (AMTSL), misoprostol should be offered by a health worker trained in its use for PPH prevention (Prata et al., 2008). Currently in four African countries (Ethiopia, Tanzania, Uganda and Nigeria), misoprostol has been registered for the prevention and treatment of PPH. However, in Nigeria less than 5% of primary health care workers in the country have knowledge of the drug. It is also not presently on the essential drug list in Nigeria and therefore not on the public purchasing list in the country.

### **Nigeria's approach**

Maternal and child mortality needs a concerted approach that must involve all and sundry. In Nigeria, conscientious effort is made by the government towards addressing the problem. Some of these interventions include:

### ***National child health weeks***

This is a programme by the Nigerian government in close collaboration with UNICEF aimed at reducing high mortality among Nigerian children. This has proven to be a highly effective strategy to save lives and prevent

illness. It has the propensity of reducing child and maternal mortality. This exercise which holds twice in a year aims at delivery of high impact, low cost child survival interventions. During this period, (the course of the week) about 30 million children are expected to receive immunization including polio, de-worming medicines, insecticide treated bed nets while mothers are counseled on key household practices like breastfeeding and basic hygiene, clean water, proper sanitation, hand washing with soap etc.

### ***National midwives service scheme (NMSS)***

In Nigeria, only 39% births take place with assistance of medically trained personnel, and immunization coverage ranges between 32.8 to 60%. The low coverage rates translate into high rates of child and maternal mortality. In many health facilities across the country, there is shortage of skilled attendants and this has been reported to impact negatively on utilization of services by women (FMO and NPHCDA, 2009). The importance of skilled attendant at every birth for improving maternal health has been severally highlighted in various safe motherhood conferences and technical sessions. It is held as the single most critical intervention for safe motherhood in the African region where only a few of the deliveries are assisted by a skilled attendant.

Skilled care refers to the care provided to a woman and her newborn during pregnancy, childbirth and immediately after birth by an accredited and competent health care provider who has at his/her disposal, the necessary equipment, drugs and supplies and the support of functional health system including transport and referral facilities for emergency obstetric care. A skilled birth attendant is an accredited health professional such as a midwife, doctor or who has been educated and trained to proficiency in the skills needed to manage normal (uncomplicated) pregnancies, child birth and the immediate post natal period; and the identification, management and referral of complications in women and newborns. Traditional birth attendants trained or not are excluded from the category of skilled attendant.

According to WHO, 'midwives are the prototype of skilled attendants recommended for normal delivery' (International Conference of Midwives, 2005). In Nigeria, skilled attendance of antenatal care and births are 58 and 39%, respectively (Nigeria Demographic and Health Survey, 2008). This has been severally blamed for the appalling maternal, newborn and child health outcomes in Nigeria. Many facilities in rural areas suffer from lack of health care providers, particularly midwives, and efforts at making the government provide appropriate health manpower have largely remained unsuccessful.

This initiative seeks to provide an emergency stop gap to the human resource short of skilled attendants at our primary health care system. Trained midwives and

unemployed/retired midwives living in the States/Local Government Areas which have been identified as priority areas and show interest in participating in the program are given refresher training courses and additional skills in the management of common childhood illness [(that is, Integrated Management of Childhood Illness (IMCI)]. Training also include how to offer emergency obstetric and neonatal care service as a referral backup for the midwives at the various primary health care facilities where they are posted. Such retired midwives would be expected to show certified evidence of being retired to avoid internal brain drain. They are placed on a minimum allowance of thirty thousand naira (200 USD) per month by the Federal Government. The State government provides transport and shift duty allowances as well as accommodation in collaboration with Local Government Areas who will also be responsible for rural posting allowance.

Though the scheme is operational, proper instruments to monitor progress is inadequate. Most of these midwives complain of not having full control of the centers to execute their expertise which are already manned by other health personnel. Maximum cooperation within the body of health care workers is of outmost importance in actualizing the goal of this scheme.

### ***Free medical treatment for pregnant women and under five***

There is introduction of free medical services for pregnant women and children less than five years in most of the States in the country in principle, but actual implementation is yet to take place in most of these States. In Kaduna State, the drugs are customized with the picture of the State Governor, map and symbol of the State to check abuses and pilferage.

### ***What the christian nurse can do***

First and foremost, the christian nurse should acquire and update necessary skills and should exhibit commitment to work at various duty posts. They should offer their expertise by taking part in the National Midwife Scheme programme aimed at cushioning the shortage of skilled personnel in the rural areas. Through the instrument of parish nursing, Christian nurses should organize policy dialogue meetings and health education in their various congregations to educate women and address the various challenges to reduce maternal mortality in Nigeria. In order to encourage and increase number of births attended by skilled personnel, machineries to foot delivery cost of indigent mothers when the need arises can be set up through collaborative effort of Fellowship of Christian Nurses as a charity organization.

## Conclusion

1. The persistent high maternal and child mortality rate in Nigeria is at variance with the projected achievement of the 4th and 5th Millennium Development Goals (MDGs).
2. Nigeria that constitutes about 1% of the world's population, accounts for 10% of the world's maternal and under-5 mortality rates.
3. Factors associated with the aforementioned problems include, poor socio-economic development, weak health care system and low socio-cultural barriers to care utilization.
4. Key interventions services identified for curbing these problems include, care during pregnancy, birth and post partum supports in addition to approved child survival intervention.

## RECOMMENDATIONS

Based on the conclusions arrived at in this study, the authors recommend that efforts should be made by relevant stakeholders such as individuals, families, communities, health care providers and the government towards:

- (a) Curbing maternal and child mortality, by tracking down the escalating figure in the world, Africa and Nigeria in particular.
- (b) The Christian nurse as a major stake holder must do everything possible to offer her expertise towards the reduction of these death tolls.
- (c) Emulating positive steps already taken by some countries of the world who have recorded positive outcome in this direction.

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