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TRENDS IN INFANT AND CHILD MORTALITY IN NIGERIA: A WAKE-UP CALL ASSESSMENT FOR INTERVENTION TOWARDS ACHIEVING THE 2015 MDGS.

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ABSTRACT

A child's right to survival is fundamental. It is the building block towards the realisation of a child's potential and on it hinges other basic rights of the child. Yet, many children do not enjoy this right. This paper examined trends in infant and child mortality in Nigeria as a wake-up call for intervention towards achieving the 2015 MDGs target. Between 1990 and 2008, under-five mortality in Nigeria only falls from 199 to 157 against the 62 MDGs target by 2015. Currently, about 5.9 million babies are born in Nigeria every year, and nearly one million children die before the age of five years. One quarter of all under-five deaths are newborns - 241,000 babies each year. Many deaths occur at home and are therefore unseen and uncounted in official statistics.
However, Vaccine Preventable Diseases (VPD) are the major causes of childhood mortality in Nigeria due to low vaccination uptake, poor health care system, inadequate personnel etc. The study therefore, call for an urgent action and greater national priority on child survival through interventions that will be integrated at community and family levels, targeting pregnant women, under-five children and accessing the hard-to-reach in order to meet the 2015 MDGs.

SOURCE OF INFORMATION "This paper compiles information and data on the Trends in Infant and Child Mortality in Nigeria. Facts have been drawn from a wide range of sources including the Nigeria Demographic and Health Survey (NDHS), Federal Office of Statistics, National Planning Commission, UNICEF reports, Survey reports, Academic articles, Policy and Programme documents etc."

INTRODUCTION

Over the years, studies have revealed that the progress countries have made toward reaching their goals of reducing by two- third childhood mortality based on the 1990 progress has been mixed, with a few countries on-track toward achieving the target, others having little or no success, and some countries actually losing ground (Bryce J, Terreri N, Victora CG, Mason E, Daelmans B, Bhutta ZA, et al, 2006). For about two decades, the annual number of under-five deaths only fall from around 12.4 million to about 8.1 million in 2009 - nearly 22,000 per day or 15 every minute (You D, Jones G, Wardlaw T, United Nations Inter-agency Group for Child Mortality Estimation, 2010). Though, when considering the trend from different reports since 1990, it is clear that under-five mortality had fallen. This is evidence that progress on child mortality is being made across all regions of the world, with many regions having reduced the under-five mortality rate by 50% or more (UNICEF, 2010).
However, evidence from UNICEF, WHO, the World Bank, and the UN Population Division report(s) shows that the highest rates of mortality in children under age 5 years continue to occur in sub-Saharan Africa where, in 2009, one in every eight children (129 per 1000 live births) died before their fifth birthday-a level nearly double the average in developing regions (66 per 1000) and around 20 times the average for developed regions (6 per 1000) (UNPD, 2010). Under-5 mortality is increasingly concentrated in the developing countries: 70% of the world's under-5 deaths in 2009 occurred in only 15 countries while half of the deaths occurred in only five countries: India, Nigeria, Democratic Republic of the Congo, Pakistan, and China, whereas India and Nigeria together account for nearly one-third of the total number of under-5 deaths worldwide (21% and 10%, respectively) (You D, Jones G. et al, 2010).
In Nigeria, underneath the statistics lies the pain of human tragedy, for thousands of families who have lost their children. Even more devastating is the knowledge, according to recent research, that essential interventions reaching women and babies on time would have averted most of these deaths since preventable or treatable infectious diseases such as malaria, pneumonia, diarrhoea, measles and HIV/AIDS account for more than 70 per cent of the estimated one million under-five deaths in Nigeria (UNICEF, 2010).
Currently, about 5.9 million babies are born in Nigeria every year, and nearly one million children die before the age of five years. One quarter of all under-five deaths are newborns - 241,000 babies each year. Many deaths occur at home and are therefore unseen and uncounted in official statistics (FMOH, 2011). Though, when considering the mortality trends in Nigeria since 1960, it is very clear that child deaths are falling, but not quickly enough as the current rate of progress is well short of the MDG target of

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a two-thirds reduction by 2015. Report from 2008 NDHS also revealed that currently, 75 children per 1,000 live births die before their first birthday (40 per 1,000 before the age of one month and 35 per 1,000 between one and twelve months). Overall, 157 children per 1,000 live births or about 1 child out of 6, die before reaching age five (NDHS 2008).

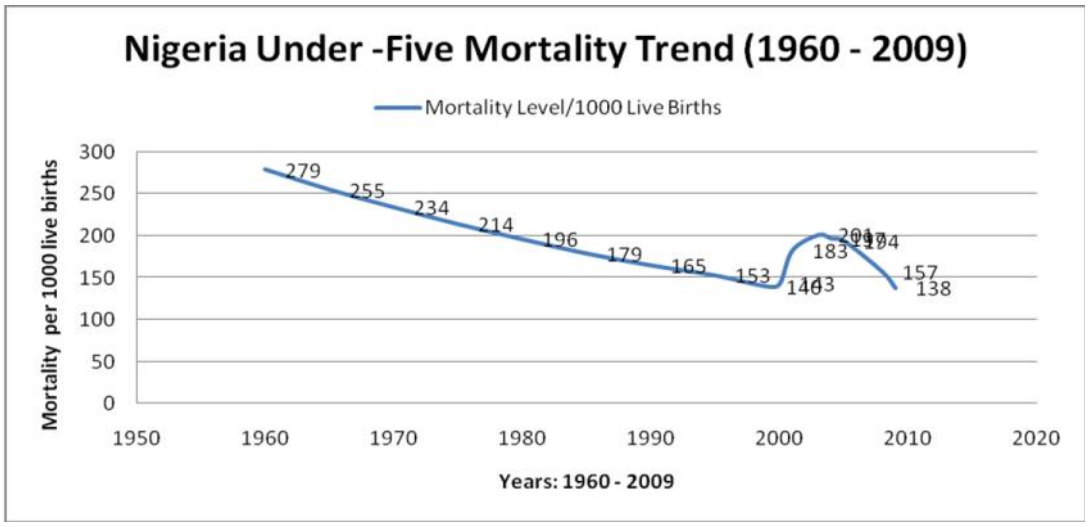
NIGERIA UNDER-FIVE MORTALITY LEVEL AND TRENDS, (1960 - 2009)

Levels and Trends in Child Mortality, 1960-2009

Year	1960	1965	1970	1975	1980	1985	1990	1995	1999	2000
U5MR	279	255	234	214	196	176	165	153	143	140
Year	2001	2003	2004	2005	2008	2009				
U5MR	183	201	197	194	157	138				

SOURCES: WORLD BANK 2006, NDHS 2008, UNICEF 2010.

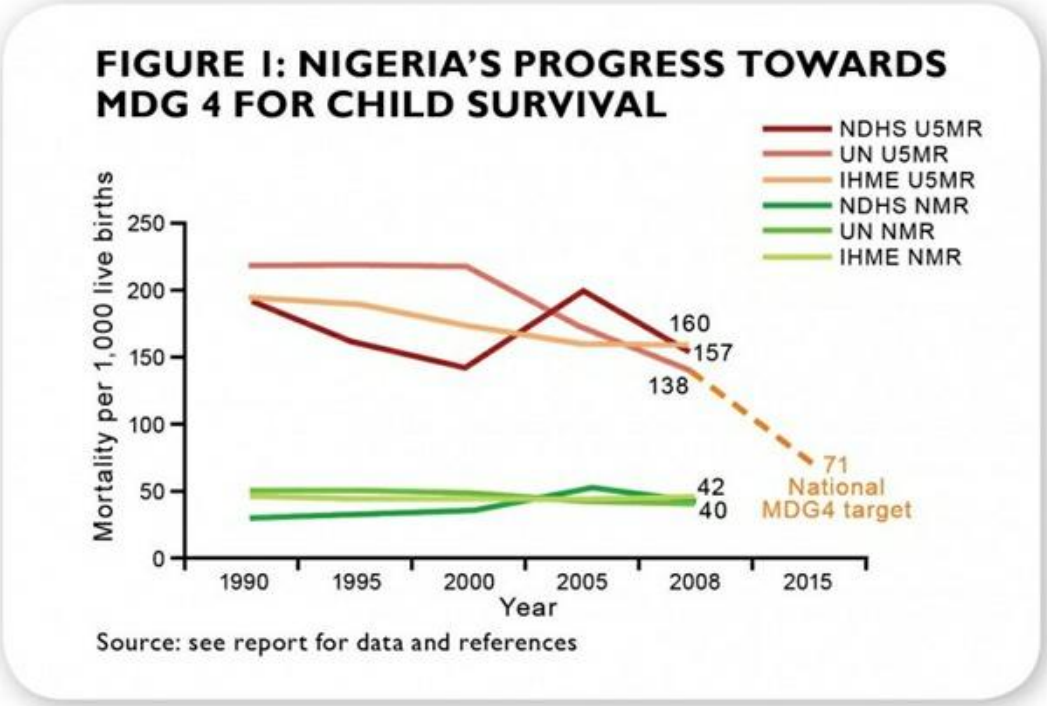
Nigeria Under-Five Mortality Graph (1960 - 2009)



SOURCE: WORLD BANK 2006, NDHS 2008, UNICEF 2010.

Between 1960 and 2000, the death rate for children under five has only reduced by 14 per cent, from 279 to 143 deaths per 1,000 live births. That means that, 14,000 fewer under-fives die each day. However considering the trends in under-five mortality in Nigeria since 1960, there is no doubt that the trends has been on decrease, although the decrease is small over the years up to 1990. However, despite the fact that under-five mortality has decreased by 18 percent between 1990 and 2000, the country still witness a reversal in the achievement made so far as the under-five mortality increase from 140 to 201 per 1,000 live births between 1999 and 2003 (NDHS 2003; UNICEF 2010). Though, recent progress has been made towards reducing under - five mortality from 201 to 157 between 2003 and 2008 according to NDHS 2008 reports and UNICEF 2010 reports. But Nigeria is currently off track in meeting the Millennium Development Goal (MDG) 4 - a two-thirds reduction in child mortality (on 1990 levels) by 2015.

NIGERIA UNDER- FIVE MORTALITY GRAPH FOR (1990 - 2009)



SOURCE: UNICEF, 2010

According to the UN inter-agency group for child mortality estimation, Nigeria has achieved only an average of 1.2% reduction in under-five mortality per year since 1990; it needs to achieve an annual reduction rate of 10% per year from now until 2015 to meet MDG 4 (IGME 2010). While some progress has been made to reduce deaths after the first month of life (the neonatal period), there has been no measurable progress in reducing neonatal deaths over the past decade. Data from the 2003 and 2008 NDHS and the 2007 Multiple Indicator Cluster Survey (MICS), reports shows that under-five mortality only fell by 22% from 201 deaths per 1000 live births in 2003 to 157 deaths per thousand live births in 2008. Whereas, neonatal deaths improved marginally from 48 per 1000 live births to 40 per 1000 live births during this period (MICS 2007, NDHS 2008, UNICEF 2010).

CHILDHOOD MORTALITY BY REGION IN NIGERIA (2003)

Childhood Mortality	**National**			**Regional**					
Number of death per 1,000 birth	Total	Urban	Rural	North Central	North East	North West	South East	South South	South West
Infant mortality									
(between birth and first birthday)	100	81	121	103	125	114	66	120	69
Under-five mortality									
(*between birth and fifth birthday*)	201	153	243	165	260	269	103	176	113

SOURCES: N B S, 2007, NDHS, 2003

CHILDHOOD MORTALITY BY REGION IN NIGERIA (2008)

Childhood Mortality	National			Regional					
Number of death per 1,000 birth	Total	Urban	Rural	North Central	North East	North West	South East	South South	South West
Infant mortality									
(*between birth and first birthday*)	75	67	95	77	109	91	95	84	59
Under-five mortality									
(*between birth and fifth birthday*)	157	121	191	135	222	217	153	138	89

SOURCE: NDHS, 2008

An examination of mortality levels and trend across the successive five-year periods based on data from the 2003 and 2008 NDHS shows that under-five mortality decreased from 201 to 157 deaths per 1,000 live births. Though 'this translates to about one in every six children born in Nigeria dying before their fifth birthday', but there was a substantial decrease in child mortality rate. Meanwhile, infant mortality rate also fall from 100 to 75 deaths per 1,000 live births. Also, analysis from this figure shows that childhood mortality rates differ substantially between urban and rural areas, and has also reduced when comparing between 2003 and 2008 for all categories. For instance, the under-five mortality rate fall from 153 to 121 deaths per 1,000 births in the urban areas, compared with the fall from 243 to 191 deaths per 1,000 births in rural areas.

Among the zones however, under-five mortality slightly reduced from113 to 89 deaths per 1,000 births in South West, and from 260 to 222 deaths per 1,000 births in North East between 2003 and 2008. Meanwhile, the South West zone has the lowest rates for all childhood mortality estimates compared with the other zones. Infant mortality is lowest in South West (59 deaths per 1,000 births) and highest in North East (109 deaths per 1,000 births).

NIGERIA ON THE BURDEN OF DISEASES

The 1993 World Development Report revealed the sub-Saharan Africa model on the burden of diseases, by stating that Nigeria lost 41 years of healthy life per 1,000 populations due to Vaccine Preventable Diseases (VPD). The state of the world's children indicated that, VPD has been implicated in the deaths of more than 20 percent of children under - five (UNICEF/Nigeria, 2001). The study further indicates that the main causes of neonatal deaths are birth asphyxia, severe infection including tetanus and premature birth. While, common causes of child mortality and morbidity include diarrhea, acute respiratory infections, measles, and malaria. Mosley and Chen (1981) also viewed morbidity and mortality of the child as being influenced by underlying factors of both biological and socio-economic, operating through proximate determinants. Studies have also shown maternal education to be a significant factor influencing child survival (Caldwell, 1979; Adewuyi and Feyisetan, 1988).

Polio: The World Health Organization reports shows that Polio is a highly infectious viral disease that invades the central nervous system and can cause paralysis, especially in the legs. One in 200 infections leads to irreversible paralysis and 5-10 percent of those paralysed die when their breathing muscles are paralysed. In 2003, the country had the highest prevalence of circulating wild polio virus in the world (WHO, 2003). Widely endemic in five continents since 1998, polio is now concentrated in parts of the Indian sub-continent and sub-Saharan Africa, including Nigeria (World Health Organization, 2005). The year 2002 seems to be an exception in that there appears to be an increase in cases due to probable resurgence of infections or heightened AFP surveillance. Between January and August 2002, a total of 77 wild polio cases were confirmed (CDC 2002). Although these cases are mainly restricted to particular regions of the country (in particular the northwest and central regions), polio eradication in Nigeria still remains a challenge as routine immunisation levels nationally and throughout these regions are low (NDHS 2008).

Measles: Measles continues to be a serious problem in Nigeria. Measles is still endemic in Nigeria and is a major cause of childhood illness and death. A study in 2006 revealed that Between January and August 2004, at least 35,856 children were affected by measles in Nigeria and also shows that the trend of measles cases in Nigeria follows a seasonal pattern with periods of high transmission (January - June with peaks in March) and low transmission from July to December (FMOH, 2006). While, the analysis of the disease burden by age group revealed that in 2004, 58% of the measles cases were reported among under 5 years of age, with 30% in the 5 to less than 15 years of age and 12% in 15 years or above (MICS, 2007). Considerable progress was made in routine immunization against measles worldwide, particularly in Africa, protecting millions of children against this often fatal disease.

In 2008, coverage reached 81 per cent in the

developing regions, up from 70 per cent in 2000. However, projections show that without sustained funding for immunization activities in priority countries, mortality from measles could rebound quickly, resulting in approximately 1.7 million measles related deaths between 2010 and 2013 (UNICEF, 2010).

Malaria: Malaria is by far the most important cause of morbidity and mortality in infants (38% and 28%) and young children (41% and 30%) (NHMIS, 1999). Findings from this source also revealed that about 75 percent of malaria deaths occur in children under five with about 11 percent of maternal deaths, especially for first-time mothers. Malaria contributes largely to neonatal and perinatal mortality as well as anaemia in young children, thus undermining their growth and development (NHMIS 1999). It was estimated in 1999 that 50 percent of the population has at least one episode of malaria each year, whereas children less than age five suffer from two to four attacks a year (NHMIS, 1999).

Malaria is endemic throughout Nigeria. In 2009, the Federal Ministry of Health FMOH revealed that Malaria accounts for nearly 110 million clinically diagnosed cases per year, 60 percent of outpatient visits, and 30 percent hospitalizations. An estimated 300,000 children die of malaria each year. It is also believed to contribute up to 11 percent maternal mortality, 25 percent infant mortality, and 30 percent under-five mortality (FMOH, 2009). In addition to the direct health impact of malaria, there are also severe social and economic burdens on communities and the country as a whole, with about 132 billion Naira lost to malaria annually in the form of treatment costs, prevention, loss of work time, etc. (FMOH, 2009).

Diarrhoeal Illnesses: These illnesses are the second most common cause of infant deaths and the third main cause of under-five mortality in the World. The World Bank (2001) reveals that Nigeria has lost 43 healthy years of life per 1,000 from diarrhoeal illnesses. Data from Multiple Indicator Cluster Survey (MICS, 1999) and Nigeria Demographic and Health Survey (NDHS, 1999) also buttress this fact; both surveys report a high prevalence of diarrhoea among children in the two weeks preceding the surveys. Figures were 15.3 percent among children under five (1999 MICS) and 15.5 percent among children under three (1999 NDHS).

In addition, the 2008 NDHS shows that 10 percent of the children under five had a diarrhoeal episode in the two weeks preceding the survey and 2 percent had blood in the stool. The prevalence of diarrhoea varies by age of children. Diarrhoea is more prevalent among children whose households do not have an improved source of drinking water (12 percent), compared with households that have an improved source of drinking water (8 percent). The proportion of children with diarrhoea is higher in rural areas than urban areas (11 and 8 percent, respectively). The prevalence of diarrhoea varies among zones: children in North East zone are more susceptible to episodes of diarrhoea (21 percent) than children in other zones. The lowest proportion of children with diarrhoea is in South-South (4 percent) (NDHS, 2008). Also, studies have shown that pneumonia, diarrhoea, malaria and AIDS accounted for 43 per cent of all deaths in under-fives mortality in Nigeria in 2008, and more than a third of all child deaths were attributable to malnutrition (UNICEF, 2009).

ARI: ARI include a wide range of upper and lower respiratory tract infections (pneumonia), commonly manifesting with a cough, fever, and rapid breathing. ARI were the fourth main cause of under-five morbidity and, together with VPD, the third main cause of infant mortality. Early diagnosis and treatment with antibiotics can prevent a large proportion of deaths caused by ARI (NDHS, 2008). The World Bank (2001) highlights that Nigeria lost 41 healthy years of life per 1,000 due to ARI. However, over the years, progress have been made towards the reduction of ARI in Nigeria as reports from the 1999 NDHS reveal that about 11 percent of infants less than three years of age had ARI symptoms in the two weeks preceding the survey while the 2008 NDHS, estimated Fever and ARI prevalence to be 16 percent and 2.8 percent respectively. Also, variation in the prevalence of ARI across regions was minimal, but differences existed in the treatment of ARI. Only one-third of children with ARI in the northeast region were taken to health facilities in contrast to almost 70 percent of ARI ill children in the southwest (NDHS, 1999, 2008).

Childhood Malnutrition: Progress in nutrition is assessed from indicators of malnutrition, breastfeeding, salt iodisation, and vitamin-A supplementation for children under five. WHO/UNICEF (1989) recommends that children be exclusively breastfed for the first four to six months of life, and thereafter introduced to appropriate and adequate complementary foods along with breast milk. Past studies in Nigeria revealed that more than 50 percent of all childhood deaths have under-nutrition as an underlying factor (NPC/UNICEF, 1998). The 2008 NDHS shows that despite the slight improvement, Nigerian infants are not getting the maximum benefits of exclusive breastfeeding, given that about 40 percent of infants ages 2-3 months were already receiving supplements, thus putting them at risk of diarrhoeal infections, an underlying factor in malnutrition (NDHS, 2008).

For older children, the problem is lack of adequate complementary feeding. Adequate complementary foods must contain the recommended dietary allowances (RDA) for energy, measured by caloric intake and protein. Among children ages 12-23 months, 13 percent were still on breast milk when they ought to have been introduced to adequate and appropriate complementary foods. Meanwhile, majority of children receive more cereal and root based carbohydrates as opposed to protein-rich foods.

From the figures reported in the 1990, 1999, and 2003 NDHS, the trend in the nutritional status of Nigerian children has worsened with regard to stunting and wasting (from 36% in 1990 to 46% in 1999 and 38% in 2003 for stunting and 11% in 1990 to 12% in 1999 and 9% in 2003 for wasting). However, according to 2008 NDHS, 41% of children under five children are stunted or too short for their age. Stunting is more common in rural areas (45%) than urban areas (31%). Stunting ranges from 22% in the South East zone to 53% in North West zone. Wasting (too thin for height), which is a sign of acute malnutrition, and has increased from 9% in 2003 to 14% in 2008. Presently, almost one-quarter (23%) of Nigerian children are underweight, or too thin for their age (NDHS, 2008).

HIV/AIDS: Since it was first reported in 1986, the prevalence of HIV/AIDS in Nigeria has steadily risen when considering its level and trends. The rate among women attending antenatal clinics has increased from 1.8 percent in 1991 to 5.8 percent in 2001 while among teenagers and young adults, the prevalence rate was 6 to 6.5 percent (FMOH, 2001). Furthermore, reports from Policy/Nigeria 2002 revealed that about 3.4 million people in Nigeria were HIV-positive and that this number will rise to more than 4 million in 2005 (POLICY/Nigeria, 2002). However, the 2010 HIV sentinel sero-prevalence survey among pregnant women attending antenatal clinics in Nigeria revealed a national HIV prevalence of 4.1%. The prevalence ranged from 1.0% in Kebbi State to 12.7% in Benue State. A total of 16 States and FCT had prevalence above 5%. Five of the six States in the South South Zone, three of the five in the South East Zone, five of the seven in North Central Zone, two of the six in North East Zone, and one of the six in South West Zone had prevalence of 5% and above (FMOH, 2010).

Also, analysis of the HIV prevalence among pregnant women attending antenatal clinics in Nigeria from 1991 to 2010 shows that HIV prevalence increased steadily from 1.8% in 1991 through 4.5% in 1995 and peaked at 5.8% in 2001. Thereafter, it declined to 4.4% in 2005 and stabilized between 4.4% (2005) and 4.1% in 2010 (FMOH/NACA and UNAIDS, 2010). The implication of these data on child survival are manifold and grievous, since infants born to HIV-positive mothers are at 30-percent risk of becoming HIV infected (NPC/UNICEF, 2001). Therefore, with our population, high fertility rate, and poor coverage of PMTCT services, the number of paediatric HIV infections is expected to increase significantly in the next few years if nothing is done to reverse the current trend.

REASONS FOR SLOW PROGRESS TOWARDS ACHIEVING THE MDG GOAL 4

Several studies have reported that child survival in Nigeria is threatened by nutritional deficiencies and illnesses, particularly malaria, diarrhoeal diseases, acute respiratory infections (ARI), and vaccine preventable diseases (VPD), which account for the majority of morbidity and mortality in childhood (UNICEF, WHO, World Bank, UNPD, 2010). In addition to all these are childhood malnutrition, poor immunisation status, household poverty, and food insecurity, while other factors includes maternal illiteracy, poor living conditions (housing, water, and sanitation), and poor home practices for childcare during illnesses. Also, the alarming rise in prevalence of HIV/AIDS among pregnant women with resultant mother-to-child transmission (MTCT) adds to the burden of child mortality and morbidity in Nigeria.

●Low Utilization of Maternal Health Care Services

According to studies, the gains for many indicators of coverage of care for women and children were less significant. In 2008, 58% of pregnant women attended one or more antenatal visits, slightly lower than 61% in 2007. Also, around 39% of deliveries were with a skilled birth attendant in 2008, down from 44% in the 2007 MICS. Exclusive breastfeeding among children less than 6 months fell from 17% in 2003 to 13% in 2008. Treatment for childhood diarrhoeal disease, malaria and pneumonia have dropped or remained stagnant. Coverage of care remains on average much worse in the North East and North West of the country and this possibly explains one of the reasons for high level of maternal and child mortality in the region (MICS, 2008, NDHS, 2008).

●Poor Immunization Status

With the establishment of the Global Polio Eradication Initiative in 1988, immunization has resulted in a 99 percent reduction in the worldwide incidence of poliomyelitis (WHO; 2006). By reducing morbidity and mortality, Immunization is expected to contribute significantly to the achievement of the Millennium Development Goal to achieve a two-thirds reduction in mortality rates for children under the age of 5 years between 1990 and 2015 (Brenzel L, Wolfson LJ, Fox-Rushby J, Miller M, Halsey NA & WHO; 2006). However, the country's immunization programmes have been characterized by intermittent failures and successes since the initial introduction in 1956. Following repeated and limited initial success, the immunization programme was re-launched in 1984, but studies show that individual, community and systemic factors affect the equitable uptake of childhood immunization in Nigeria, as in other countries in sub-Saharan Africa (UNICEF; 2001). Currently, Nigeria is among the ten countries in the world with vaccine coverage rates below 50 percent, having been persistently below 40 percent since 1997 ((Hersh B. 2005; WHO, 2003). Therefore, low childhood immunization uptake, inequitable access to immunization services, deficient vaccine supplies and equipments had been revealed as major factors contributing to childhood mortality in Nigeria (Lambo E. 2005).

In addition, a study by Babalola revealed that current coverage rates for the various childhood vaccines in Nigeria are among the lowest in the world (Babalola S, Aina O. 2004). For instance, a study by Bryce J. e tall revealed that Measles was responsible for 5 percent of the child deaths in Africa (Bryce J, Boschi-Pinto C, Shibuya K, Black RE. 2005), and of the estimated 282,000 under five deaths in 2003 (Stein CE, Birmingham M, Kurian M, Duclos P, Strebel P, 2000; WHO, 2003); half of these death occurred in Nigeria (Hersh B. 2005). Omer S.B. e tall, in his study also revealed that vaccines are among the most effective preventive health measures in reducing child mortality, morbidity, and disability (Omer SB, Salmon DA, Orenstein WA, Hart P, Halsey N. 2009; Nyarko P, Pence B, Debpuur C. 2001). The study further shows that the introduction of appropriate vaccines for routine use on infants has resulted in drastic reductions in vaccine- preventable diseases (Omer SB. e tall; 2009). The Expanded Program on immunization (EPI) according to the World Health Organization in middle- and low-income countries has prevented more than 2 million child deaths from the Tuberculosis, Diphtheria, Tetanus, Pertussis, Polio, and Measles each year since its initiation in 1974 (WHO, UNICEF; 2005). Therefore, having missed the 2005 Nigeria's first Millennium Development Goals target, the country may however not meet the other goals by 2015 unless current trends are reversed (Alaba O. A, Alaba O. B, 2009).

● High Unmet Needs of Family Planning

With an unmet need for family planning of 20 percent (15% for spacing, 5% for limiting births) and a contraceptive

prevalence rate (CPR) of 15 percent, Nigerians are still having more children than planned and at shorter than desired birth intervals (2008 NDHS). A multivariate cross-country analysis research on effect of birth intervals on childhood morbidity and mortality reports that Nigerian mothers had short birth intervals and these intervals posed substantial mortality and nutritional risks for children (Rustein, 2001). The study also reveals that intervals of at least 36 months are associated with the lowest mortality and morbidity levels, with the IMR dropping by about 28 percent and the U5MR declining by 23 percent. Other benefits include a reduction in the annual number of deaths of children less than five years by 165,000 and a drop in the TFR of longer birth intervals of 8 percent. Apart from poor budgetary allocations for FP/RH activities, there is also a marked level of resistance to family planning use in Nigeria because of socio-cultural and economic factors (2008, NDHS).

●High Level of Maternal Morbidity/Mortality

Maternal mortality in Nigeria is high, varying between 840 and 545 deaths per 100,000 live births with wide geographical disparity ranging from 166 per 100,000 live births in the southeast to 1,549 per 100,000 live births in the northeast (1999, 2008 NDHS). Nigeria contributes to 10 percent of the world's maternal deaths with an average of seven for every 1,000 births. With about 2.4 million live births annually, about 17,000 Nigerian women die annually. Or to put it another way, one woman dies every 30 minutes from complications of pregnancy and childbirth (NPC/UNICEF, 2001). These indicators have a negative impact on child survival, since children who lose their mothers experience an increased risk of death or other complications. Studies have shown that children who lose their mothers during childbirth, particularly female children, are 10 times more likely to die than those whose mothers survive (Strong, 1992). For each woman who dies, approximately 20- 30 others suffer short- and long-term disabilities from complications of pregnancy and childbirth. Major causes of maternal morbidity and mortality are haemorrhage, infection, unsafe abortion, hypertensive disease of pregnancy, and obstructed labour. Apart from malaria, diarrhoeal illnesses, ARI, and VPD, a large proportion (30-40%) of infant morbidity and mortality globally and within Nigeria can be attributed to preventable factors during pregnancy and delivery (WHO, 1996; Lawoyin, 2000). Low-birth weight, which underlies a significant percentage of early deaths in infancy, is largely due to poor maternal weight gain during pregnancy, arising from maternal morbidity (malaria) and HIV/AIDS, among others (Njokanma and Olarewaju, 1994).

●High Poverty Level

There is a synergistic interrelationship between poverty, ignorance, poor health, malnutrition, and reduced child survival, which is worsened by social exclusion and political marginalisation. A child born to a financially deprived and less educated family is at risk of dying prenatally or within the first month of life, since the mother was probably poorly nourished during pregnancy, had little or no ANC, and is unlikely to have delivered at a health facility. On surviving the first month of life, the child is then exposed to increased risks of illnesses, such as malaria and diarrhoea, due to poor living conditions, limited access to safe water and inadequate sanitation, malnutrition from household food insecurity, or ignorance about good child feeding practices. Large family size (from ignorance of and lack of access to family planning) puts pressure on the mother to work in order to provide for the family, thus leaving the child quite possibly inadequately cared for. All these factors are further aggravated by limited access to health services due to poor income and low levels of maternal education, often leading to the non-immunisation of the child (UNICEF, 2008). A World Bank analysis based on 1990 NDHS data and subdividing the surveyed households into quintiles, found a significant relationship between poverty and increased infant and child mortality, low immunisation coverage rates, reduced access to health services, and malnutrition (WHO, 1990)

■ EFFORTS TOWARDS REDUCING CHILD MORTALITY IN NIGERIA

There had been series of strategies available from documents employed by Nigerian government towards reducing child mortality in the country since 1960. Nigeria as one of the signatory to both the 1989 UN Convention on the Rights of the Child (CRC) and the Organisation of African Unity (OAU) Charter on the Rights and Welfare of the Child and following the ratification of the CRC in 1991, the government of Nigeria simplified and translated this document into the three major Nigerian languages. Nigeria also ratified the Declaration and Plan of Action for Children arising from the WSC, held in New York in 1990. This action was followed up with the preparation of a National Programme of Action (NPOA) for the Survival, Protection, and Development of Children, adopted in 1992. In 2000, there was also an End of Decade Review (EDR) of the progress made towards achieving these set goals. Regarding child health, the country has adopted and implemented to a certain extent a number of major global initiatives affecting children, such as the Safe Motherhood Initiative and its follow-up Making Pregnancy Safer, Baby-Friendly Hospital Initiative (BFHI), and Integrated Management of Childhood Illness (IMCI). Others are RBM Initiative, Elimination of IDD, VAD Control, and NPI, the latter with a special emphasis on the eradication of poliomyelitis. In addition in 2001, the National AIDS Control Agency (NACA) established Prevention of Mother-to-Child Transmission (PMTCT) projects in 11 teaching hospitals nationwide.

■ NIGERIA POLICIES AND PLANS TOWARDS CHILD SURVIVAL

Nigeria has in place several policies and plans that affect the survival of children and their mothers. Some of these have been adopted and are being implemented, whereas some are drafts or under review. These documents include the National Health Policy of 1988 (revised in 1996), Maternal and Child Health (MCH) Policy (1994), National

Immunisation Policy and Standards of Practice (1996), which is currently being revised. Others include the National Acute Respiratory Infections Programme: National Policy and Plan of Actions, 1991-1995; Breastfeeding Policy (1999); Essential Drug Policy; National Nutrition Policy, compiled in 1995, adopted in 1998, and published in 2001; National Reproductive Health Policy (2001); and National Policy on Population and Sustainable Development (2001 draft) and revised in 2004. In addition, the Water Supply and Sanitation Policy was adopted in 2000. As well as policy on Fortification of Food with Vitamin A; National Programme of Action for the Survival, Protection, and Development of the Nigerian Child (1992); and National Policy on Women (2000), which strives to enhance the status of women, and the MCH component of the National Primary Health Care Development Programme, aimed at improving the health status of women and children. The Federal Ministry of Health (FMOH) also strongly supports and is implementing all aspects of the RBM Initiative backed by the Guidelines for Malaria Control in Nigeria (1989), National Malaria Control Policy (1997), National Anti-malarial Policy (2001), and the Strategic Plan for Rolling Back Malaria in Nigeria, 2001-2010.

■ Donors/Partners

The Nigerian government has enjoyed and still enjoys the goodwill of many international donors and partners in the area of child survival and maternal health. As a result of the decline in public funding in the late 1980s and early 1990s, the health sector became highly dependent on donor funding and technical input from development partners. WHO, the World Bank, African Development Bank (ADB), USAID, through its implementing partners (IPs), UNICEF, and the Department for International Development (DFID) are key players. Funds from these agencies support the formulation of policies, plans, and guidelines; advocacy and dialogue; health sector reforms; capacity building; child and maternal health service delivery, including access to adequate immunisation services; and vitamin-A supplementation. Other areas that receive support from these agencies include NGO capacity and network building, research, and awareness about child survival issues. Others partners that significantly contribute to child survival in Nigeria include the Interagency Coordinating Committee (ICC) for the Polio Eradication Initiative (PEI) and routine immunisation to which Rotary International via Polio Plus, the Canadian and Japanese governments, and the European Union (EU) belong. Other funding sources include the Bill and Melinda Gates Foundation and the Global Alliance on Vaccine and Immunisation (GAVI), with the Global Fund for AIDS, Tuberculosis, and Malaria.

REASONS FOR FAILURE DESPITE SERIES OF PLANS AND EFFORTS TOWARDS CHILD HEALTH IN NIGERIA

In spite of various plans, strategies and polices, the rate of improvement in child survival indices has been slow and one of the worst in sub-Saharan Africa, principally because of the following major factors:

- Poor planning and funding by the government.
- Limited inter-sectoral approaches and lack of decentralised management capacity
- Non-sustainability of donor-funded and inadequate monitoring and evaluation.

CONCLUSION

The primary aim of this paper was not to calculate U5MR for Nigeria but to see the trend in the progress made since 1990, which will serve as a wake -up call assessment towards achieving the 2015 MDGs target and to examine those factors that contributes to lack of projected decline in mortality rate in Nigeria. The expectation is that U5MR will continue to drop and may even plummet to a moderate figure of 55/1000 by the year 2015. However, the steep decline over the years from the very high rate of 29%/1000 in 1990 to 14%/1000 in 2000 gives hope, though such decrease is not in consonance with the expectation of the world on under five mortality. However, the subsequent increase from the 14%/1000 in 2000 to 17%/1000 in 2001 and 19%/1000 in 2004 are indications of reversal in the down-trend achievement made since 1990. Meanwhile, the recent decrease in child mortally between 2004 till date shows that Nigeria has the capacity to meet the MDGs 4 by 2015.

Therefore, it should be noted that the challenges we face today regarding the health of under-five Nigerian children cannot be put off, since they are not insurmountable. That is, we have the tools, resources, and knowledge to address our nation's most critical child survival problems and build on the considerable achievements that have made since the World Summit for Children in 1990. In general, progress in reducing under-five mortality depends on the commitment by academics, governments, international agencies, health care professional associations, donors and non-governmental organizations to work together towards achieving Millennium Development Goals 4.

RECCOMENDATION

If MDG 4 is to be achieved and needless loss of under-five child death prevented, it is essential that national governments, international agencies and civil societies increase attention to systematically preventing and tracking under-five deaths. Partners must work together now to increase their efforts and resources, focusing not just on one intervention or cause but on developing a functional continuum of basic services that save lives and improve health for millions of newborns and children. That is, what is needed now is urgent action and greater national priority placed on children's issues so that significant gaps and the growing disparity in child health and survival do not reverse the progress already made. Therefore, the essential set of interventions judged to be feasible with high levels of implementation in low income countries like ours comprise both preventive and curative options and they include, among others:

- **Improve national treatment of VPD** - government in collaboration with ministry of health must develop strategies to improve adequate breastfeeding, vaccinations, zinc and vitamin A supplementation, insecticide-treated mosquito nets, oral rehydration therapy, antibiotic treatment of infection and treatment of malaria across the nation.

● **Develop integrated approach to child health** - Tackling under-five mortality will need an integrated approach to child health. These essential interventions can be implemented through a mix of delivery channels that are already in wide use, including outreach and community and facility-based services, while also taking advantage of longer-term opportunities such as community capacity to deliver integrated services. This will help address neonatal causes of under-five mortality and diseases that still have high mortality rates, most notably pneumonia, diarrhoea and malaria.

● **Institutionalizing PHC Nationwide** - Government should embark on enduring process of institutionalising PHC in the country with the provision of necessary skills, management techniques, and capacity building through the active involvement, participation, and sense of ownership by communities at village and district levels.

● **Strengthening women empowerment programme** - Increased education of women, improved sex equality, comprehensive family planning services so that women can space or limit births, and strengthening of women's empowerment in decision making about seeking care are essential elements of strategies that will improve maternal health and reduce neonatal and child deaths.

● **Build stronger partnerships** - No single country, donor or development agency can on its own provide everything that children need. Partnerships can allow different agencies to tackle different tasks, pursue complementary goals and achieve bigger and better results. At the national level such partnerships can be based on the 'Three areas' (i) agreed- upon national health action framework, (ii) national health coordinating authority with broad-based multi-sectoral support and (iii) country-level system for monitoring and evaluation.

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