

## Sub-Sahara African Neonates – Ghosts to Statistics

Bamgboye M Afolabi\*

Health, Environment and Development Foundation, 34 Montgomery Road, Yaba, Lagos, Nigeria

### Abstract

Unlike in many parts of the developed world, the African neonate, in some cases, is disadvantaged right from inception. In many urban slums and in most rural parts of the continent, the mother is often malnourished even before getting pregnant. Once in antenatal period, the pregnancy takes its toll on the already malnourished mother to the extent that the fetus is left on its own to extract all the nutrients it needs to survive in the womb. Feto-maternal malnutrition is often overlooked as a risk factor for stillbirth, low birthweight babies and maternal morbidity and mortality. Maternal conditions are directly linked to neonatal circumstances. An embryo may face many genetic, hereditary, mechanical and/or biological complications such as albinism, Spina bifida, cleft lip/cleft palate, development in the fallopian tube, obstruction due to sub-mucosal fibroid or placenta previa, just to mention a few. While leg or shoulder presentation, cord strangulation or locked heads in twin pregnancy are delicate intra-partum conditions, asphyxia neonatorum is about the commonest immediate post-partum pathology that may lead to neonatal death. This paper briefly describes neonatal morbidity and mortality, their remote and proximal causes and the need for essential health care as a right of mother, a right of the neonate and a right of the growing child.

**Keywords:** Neonate; Maternal; Essential health care; Social determinants of neonatal health

### Introduction

There was no health and development target more widely approved, accepted and endorsed in history more than the Millennium Development Goals (MDGs). Almost all nations globally decided to achieve, by the end of 2015, the eight interlacing targets which focused on “poverty, hunger, education and health.” The 4th MDG is very specific to the health of children, especially those below the age of five years, which include neonates (children in the first 28 days of life). The 4th MDG states, inter alia: “...a two-thirds reduction in under-five by 2015.”

Herbert et al. [1] reported that, although there has been a 28% decline in global neonatal mortality rate between 1990, when it was 33.2 deaths per 1000 live births and 2009, when it was 23.9 deaths per 1000 live births, still, over three million babies in their first month of life die. A vast majority of global neonatal deaths take place in developing countries while approximately 70% of these deaths occur in just two WHO regions: Africa and South-east Asia [1]. Neonates, especially in sub-Saharan Africa (SSA), are challenged with a diversity of lethal clinical conditions, especially infectious diseases, which demand urgent interventions [1]. When these clinical conditions, such as birth asphyxia, septicemia, jaundice, meningitis and tetanus are not appropriately diagnosed and attended to in time, they worsen the statistics of neonatal mortality in SSA. Deaths of under-fives are declining appreciably though the proportion of deaths of the neonates is growing [1]. Although pregnancy and childbirth should be safe events, however a Nigerian adage says “e ku ewu omo,” meaning “congratulations on escaping the danger of childbirth,” indicating apparent acceptance of pregnancy and delivery as hazardous to the life of the mother and child.

### The Problem

Annually, an approximate 4 million baby's die in the neonatal period [2] and another 3.2 million, in the least, are still born [3]. About 50% of neonatal deaths occur in the first 24 h of life and 75% in the first week of life and that less than 1% of these deaths occur in developed countries while almost all occur in low- and middle-income countries [4] mostly unnamed and uncounted [5]. Also, in sub-Saharan Africa,

50% of neonatal deaths occur in just five countries – Nigeria, DR Congo, Ethiopia, Tanzania and Uganda (vide: Table 1). Majority of neonatal deaths occur at home [6], in rural communities [2], among the poor and the poorest [4] and among the less educated [7]. Certain illnesses that claim the lives of neonate are worth mentioning. A risk analysis indicates that chances of dying in the first day of life in sub-Saharan Africa are approximately 10 per 1000 live births (1%). This risk is shared between mother and child as almost 50% of maternal deaths occur within one day of childbirth and about 30% of stillbirths occur during labor [8]. The top three causes of neonatal deaths in sub-Saharan Africa are Infections (39%), birth asphyxia (24%) and complications of preterm birth (25%) totaling 88% (vide: Figure 1). It is estimated that 14% of babies are born with birthweight >2,500 g due to retarded intra-uterine growth, though the period of gestation is normal. Reasons for Low Birth Weight may include the maternal physiognomy, twinning or multiple pregnancy, hypertension (either on-going or pregnancy-induced), anemia, infections (placental malaria, Human Immunodeficiency Virus, Sexually Transmitted Illnesses), poor nutrition or a combination of any of these. Gut infestation such as Helminthiasis and gut infections with microbacteria are often overlooked as causes of maternal morbidity that could play a major role in neonatal mortality. Another major cause of neonatal deaths in sub-Saharan Africa is pre-term delivery in which babies are born too early, before the normal 37 gestational weeks. These babies usually have difficulty in breathing, rapidly develop jaundice, suffer intra-cranial bleeding and are almost 13 times at risk of dying soon after birth than babies who are born full term [9]. The third group is those who are born with low birthweight and at the same time are born too early. Because of infection of the placenta by malaria parasites, the risk of being born too early, the danger of growth retardation

\*Corresponding author: Bamgboye M Afolabi, 34 Montgomery Road, Yaba, Lagos, Nigeria, Tel: +234(0) 805 865 8029; E-mail: [bmafolabi@gmail.com](mailto:bmafolabi@gmail.com)

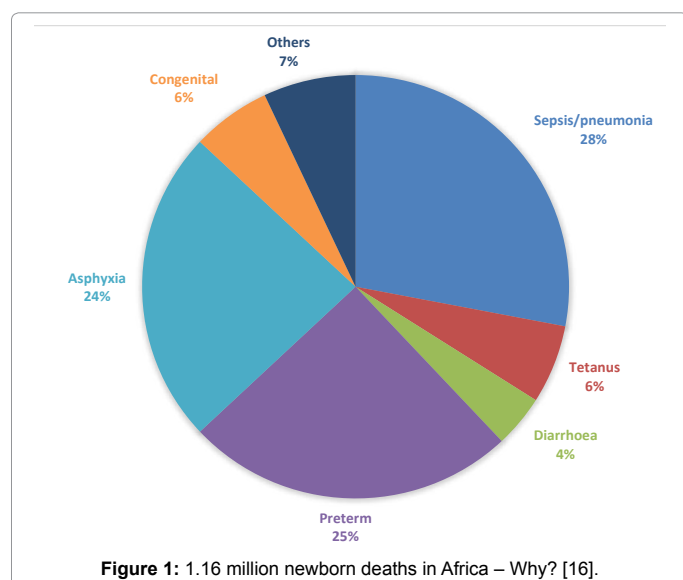
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Country	Ranking for number of newborn death	Number of newborn deaths		Ranking for number of maternal deaths	Number of maternal deaths
Nigeria	1	255,500	50% of Africa's newborn deaths	1	42,600
DR Congo	2	130,900		2	27,600
Ethiopia	3	119,500		3	26,000
Tanzania	4	44,900		8	8,100
Uganda	5	44,500		6	12,400
Kenya	6	43,600		4	13,200
Cote d'Ivoire	7	42,800		16	4,600
Angola	8	40,100		5	12,700
Mali	9	36,900		9	7,800
Niger	10	31,700		7	11,700
Ghana	11	29,200		24	3,700
Mozambique	12	28,500		10	7,700
South Africa	13	23,000		27	2,500
Madagascar	14	22,500		21	3,900
Burkina Faso	15	18,600		11	6,000
Total for 15 countries		912,200			190,500
Total for Africa		1,155,800			247300

**Table 1:** African countries with the most newborn deaths also have many maternal deaths.



**Figure 1:** 1.16 million newborn deaths in Africa – Why? [16].

and the hazard of both preterm and intrauterine growth retardation are increased. Such babies have higher risk of death and may not have a chance in a thousand. A study reports that HIV and malaria infections in pregnancy act synergistically “with serious consequences for maternal and newborn health, especially increasing LBW rate” [6-9]. Earlier studies documented assessments of babies in the first few days of life, starting with their examination [10], assessment of special features which give clues to whether or not there is any abnormality of the internal organs [11] and musculoskeletal checkup to identify disorders of muscles and bones [12]. Recent studies focused on early detection of hip abnormalities [13] and neonatal hypothermia which is considered a major factor in neonatal morbidity and mortality in low economic countries.

Scientific causes of neonatal illnesses and deaths have been propounded and method of mitigating these, such as Integrated Management of Childhood Illnesses (IMCI); Maternal, Child and Neonatal Health (MCNH) and Focused Antenatal Care (FACN) programs is very laudable. Still, neonatal deaths still continue to rise in

sub-Saharan Africa unabated while these deaths are decreasing in other parts of the world. The causes of neonatal morbidity and mortality may also be examined according to their proximal and remote causes as stated below:

**Remote causes**

- i. Overlooking Social Determinants of Neonatal Health (SDNH)
- ii. Devastating effect of certain cultural beliefs and traditions
- iii. Weak Health System
- iv. Poor living conditions
- v. Ignorance of the “Germ Theory” – that germs or microbacteria are the causes of infection

**Proximal causes**

- i. Low social standard and thus low self esteem
- ii. Lack of education
- iii. Unplanned or unintended pregnancies
- iv. Unmarried mothers
- v. Late attendance for Antenatal Care
- vi. Women over 35 years giving birth
- vii. Girls below 15 years giving birth
- viii. Social deprivation/inequality
- ix. Inequity

**Possible Solution**

There has been a drastic brain-drain of health personnel from sub-Saharan Africa to the developed worlds, most of who ensure minimal neonatal mortality in Europe, Americas and other parts of the world. The remaining health work-force in Africa is not adequate to take care of the enormous number of pregnancies and deliveries that occur daily on the continent. There must be a way to bring together Policy-makers, Researchers and Community Gatemens (PmRCg) to realize the enormous task of reducing neonatal morbidity and mortality. Majority

of neonatal deaths occur at home and become ghosts to statistics. One broad area where regular meeting of PmRCg could be of tremendous advantage is in Social Determinants of Neonatal Health (SDNH), which is the study of "...the conditions in which people (*neonates*) are born, grow, live...These circumstances are shaped by the distribution of money, power and resources at global, national and local levels" [14].

This paper does not intend to provide a silver bullet, a panacea for all neonatal deaths but to suggest additional points for consideration or remind researchers, health planners and policy makers that a lot of work still needs to be done in sub-Saharan Africa. Essential Health care of women before, during and after pregnancy and Essential Health Care of neonates in the first days of life, of infants and of children should be a top priority for governments at all levels. Essential Health Care for Neonates should take into consideration intra-uterine health, safe delivery, equipment for resuscitation, if needs be, availability of trained health staff, appropriate and adequate medication including vaccines and antibiotics, care of the mother before, during and beyond delivery period. The 11-point list provided below is by no means exhaustive but should contribute to steps that need to be taken to reduce neonatal mortality and improve the health of children in general.

- The most important point is to improve the living standard in sub-Saharan Africa and specifically the living conditions of women – i.e., education, wages, housing etc.
- Pregnancy, Preparation for Delivery (including anticipated complications) and Child Health Insurance should be considered as part of Essential Health Care
- Prenatal care should be provided in proper manner (content of prenatal care should be scrutinized)
- Pre-conceptional care for both intended and unintended pregnancies should be considered
- Survival kit should be prepared for each neonate who should include total medical care, planned education, good housing etc. Thus, early head-start should be given to neonates even before they are born
- Problematic pregnancies must be tracked and corrected. Health centers, hospitals and Antenatal clinics should be well-equipped
- Governments should invest more in health of the sub-Saharan African communities, in health research, in non-health issues that are directly related to health and thereby provide stronger political will.
- Community Health Workers (CHWs) should be reorganized, given more recognition, funded and compensated for working in rural areas.
- Verbal autopsy method, through a well-planned questionnaire, should be conducted periodically
- Every neonate should be electronically connected, through "Smart Arm-band" to a Doctor, Nurse and/or Health Center and pregnancy, birth and death registers should be set up so neonates should not be ghosts but real people
- Introduction of "care manager" nurses, which has been observed to demonstrate positive impact on patient health and self-management

could, especially in the Project Leonardo [15], be an added advantage in making visible the African neonates, ensuring their survival

## Conclusion

There is currently no reliable data on causes of neonatal deaths in sub-Saharan Africa, where almost all global neonatal deaths occur. Although there has been a reduction in global neonatal deaths, still an approximate three million babies die annually in their first 28 days of life, mostly in the first day and within the first week. Commonest causes of neonatal deaths are infections, birth asphyxia and complications of preterm birth. Causes of neonatal deaths are categorized as remote and proximal. Programs to reduce neonatal deaths include Integrated Management of Childhood Illnesses (IMCI), Maternal, Child and Neonatal Health (MCNH) and Focused Antenatal Care (FACN). An 11-point list of activities to reduce neonatal death is suggested, not excluding other laudable programs being implemented globally. The list includes improving the living standards of all Africans equitably, strategies to track every pregnancy, birth and death as well as the introduction of "care manager" as demonstrated by the Project Leonardo.

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