



Need to Escalate Awareness Strategies for In-Utero Referral of At-Risk Babies in Developing Countries: “The Better to Refer Babies Early In-Utero (The Brebeu) Project”

Tagbo BN*

Department of Pediatrics, University of Nigeria, Nigeria

***Corresponding author:** Beckie Tagbo, Department of Pediatrics / Institute of Child Health, University of Nigeria Teaching Hospital, Ituku-Ozalla, Enugu State, Nigeria, Email: tagbobeckie@gmail.com

Received Date: January 02, 2021; **Published Date:** January 19, 2021

Abstract

Neonatal, infant, under five and maternal mortalities and morbidities have remained disturbingly high in some developing countries including Nigeria. This is despite numerous efforts made to stem the tide. This viewpoint proposes a different multi-modal and multi-disciplinary approach tagged the “The Better to Refer Babies Early in-Utero (the BReBEU) Project”. It is hoped that governments and institutions would pilot this project and subsequently upscale it to reduce mortalities and morbidities among neonates and pregnant mothers.

Keywords: Neonatal; Maternal; Mortality; Project; BReBEU

Abbreviations: BReBEU: The Better to Refer Babies Early in-Utero; NMR: Neonatal Mortality Rate; IMR: Infant mortality rate; UMR: Under five mortality rate; MMR: Maternal mortality rate.

Introduction

It is no longer news that neonatal, infant, under five and maternal mortalities and morbidities are unacceptably high in developing countries. While some countries have made significant progress in the last few decades, others have stagnated with only modest progress over the years. According to the World Health Organization, Neonatal Mortality Rate (NMR) is the number of deaths during the first 28 completed days* of life per 1 000 live births in a given year or period [1]. Infant mortality rate (IMR) is the number of deaths per 1,000 live births of children under one year of age [2]. Under five mortality rate (UMR) is the

number of deaths per 1,000 live births of children under five years of age. Maternal mortality rate (MMR) is the number of registered maternal deaths due to birth - or pregnancy-related complications per 100,000 registered live births.

The major contributor to infant and under five mortality is neonatal mortality [3,4]. According to the 2012 report by UNICEF and WHO, (Figure 1), neonatal mortality constitutes 41% of under-five mortality³ most of which could be averted by prompt, skilled management by health personnel. In 2016, WHO estimated that about 46% of under five deaths occurred in the neonatal period [5]. This implies that the single biggest impact in reducing under five mortality would happen with focused interventions that reduce neonatal mortality. Although the main target of this project/ intervention is reduction in neonatal mortality and morbidity, additional expected outcome will be a reduction in maternal mortality as well as reduction in economic burden.

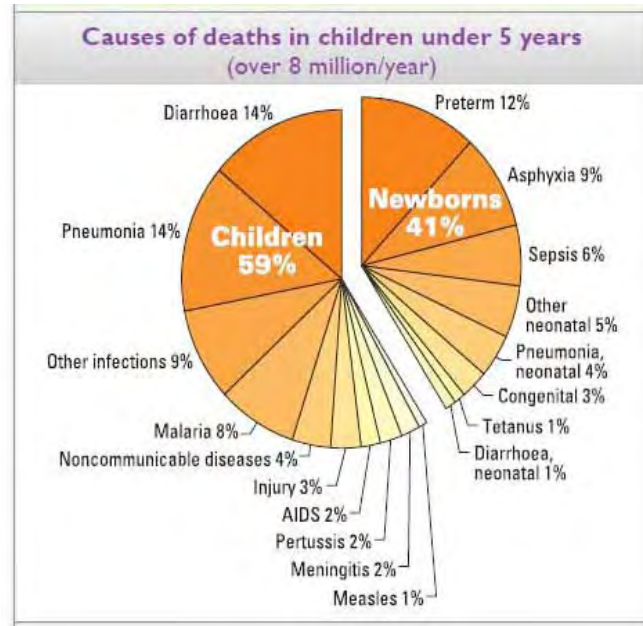


Figure 1: Causes of deaths in children under 5 years (over 88million/year).

UNICEF, WHO. Countdown to 2015 Maternal, Newborn & Child Survival, Building a future for women and children 2012 Report. 2012: 1-228. Accessed 30 July 2019.

The developing countries are saddled with a triad of poverty [6,7], low universal health coverage [8,9] and high out-of-pocket expenses [10], all leading to poor access to health services, high neonatal, child and maternal mortalities [11,12]. Many of the neonatal and maternal mortalities are associated with unskilled birth attendants, delivery outside health facilities as well as in health facilities with limited skilled health personnel. Many eventful pregnancies that should have been referred to secondary and tertiary hospitals for proactive antenatal care and high skilled delivery attendance are often overlooked (probably out of ignorance and poverty). When such deliveries are taken in under-equipped facilities, babies so delivered are referred very late to tertiary hospitals. This leaves very little time

and chance to rescue the babies. Even where such babies survive, morbidity is expectedly high. It would therefore be of great importance to systematically and strategically, create awareness and skill to promptly identify these high risk pregnancies and refer such babies' in-utero to tertiary hospitals.

Support data

There is a plethora of data on maternal and child mortalities [13-16] indicating persisting high NMR and a slower progress in decline of the same. This results in the greater proportion of child mortality being attributed to neonatal mortality. In 2017, Nigeria ranked 7th country with the highest neonatal mortality rate out of 192 countries [13].

| Rank | Country | NMR 2018 | Rank | Country | NMR 2018 |
|------|---------------|----------|------|-------------------|----------|
| 1 | Pakistan | 42.0 | 11 | Mauritania | 33.5 |
| 2 | CFR | 41.2 | 12 | Sierra Leone | 32.8 |
| 3 | South Sudan | 40.0 | 13 | Mali | 32.7 |
| 4 | Somalia | 37.5 | 14 | Djibouti | 31.7 |
| 5 | Afghanistan | 37.1 | 15 | Comoros | 31.6 |
| 6 | Guinae-Bissau | 36.6 | 16 | Benin | 31.3 |
| 7 | Nigeria | 36 | 17 | Guinae | 31.1 |
| 8 | Lesotho | 34.9 | 18 | Equatorial Guinae | 29.9 |
| 9 | Chad | 34.2 | 19 | Sudan | 28.6 |
| 10 | Cote d'ivoire | 33.5 | 20 | Angola | 28.5 |

Table 1: Comparative 2018 Data on Neonatal Mortality Rates (Ranked)*.

Table 1 [14] shows the list of 20 countries of the world with the highest neonatal mortality rates while Figure 2 [15] shows trends of neonatal, infant and under 5 mortalities in

Nigeria. These data corroborate high mortalities in Nigeria and other developing countries as well as the slow progress in the trends of improvement.

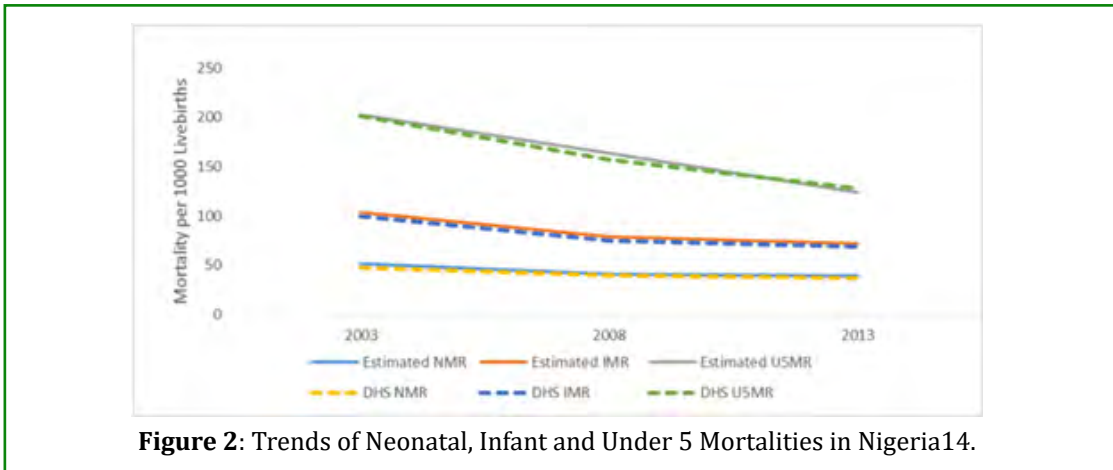


Figure 2: Trends of Neonatal, Infant and Under 5 Mortalities in Nigeria14.

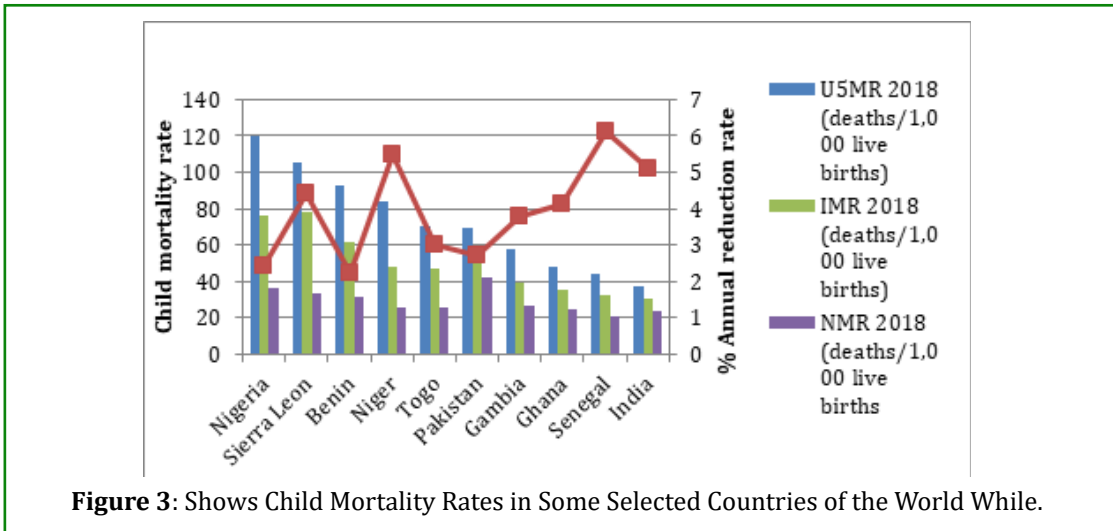


Figure 3: Shows Child Mortality Rates in Some Selected Countries of the World While.

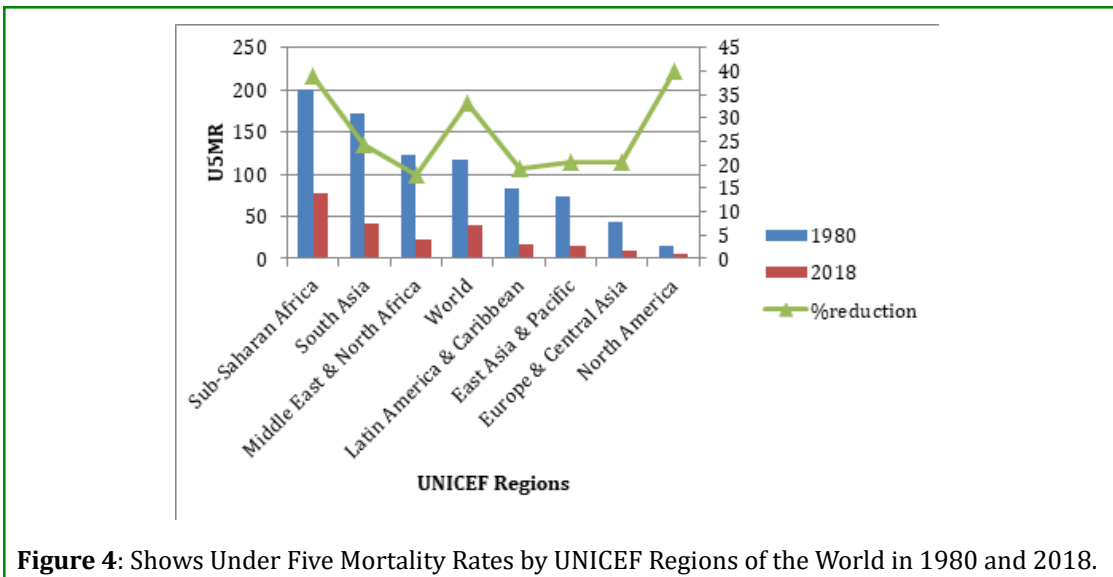


Figure 4: Shows Under Five Mortality Rates by UNICEF Regions of the World in 1980 and 2018.

Expected Benefits of the Proposed Brebeu Project

The BReBEU project has many potential advantages:

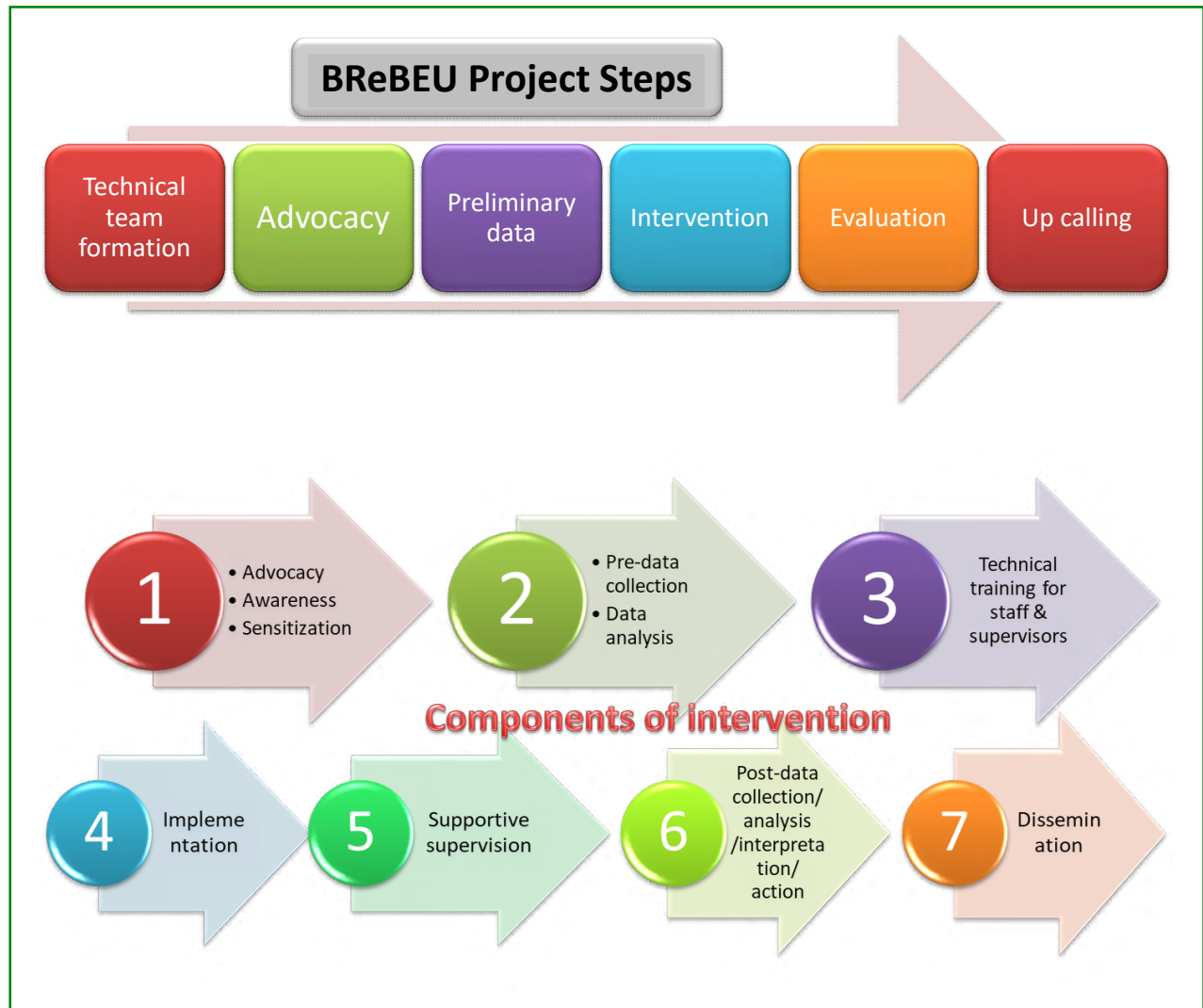
- (1) Reduced neonatal mortality (and morbidity) with consequent reduced infant and under-five mortalities.
- (2) Reduced maternal mortality.
- (3) Improved maternal and child healthcare, economic burden/ health expenditure.
- (4) Improved referral system.
- (5) Better communication and relationship between peripheral and Tertiary health facilities resulting in ongoing updating of skills of health workers in the primary health facilities.
- (6) Could serve as a vehicle for integration of other critical maternal-neonatal-child health care services.
- (7) Great opportunity for human capital development in the health sector through training and re-training, sharing of data outcomes, community engagement and buildup of a formidable army of collaborators to champion the health of

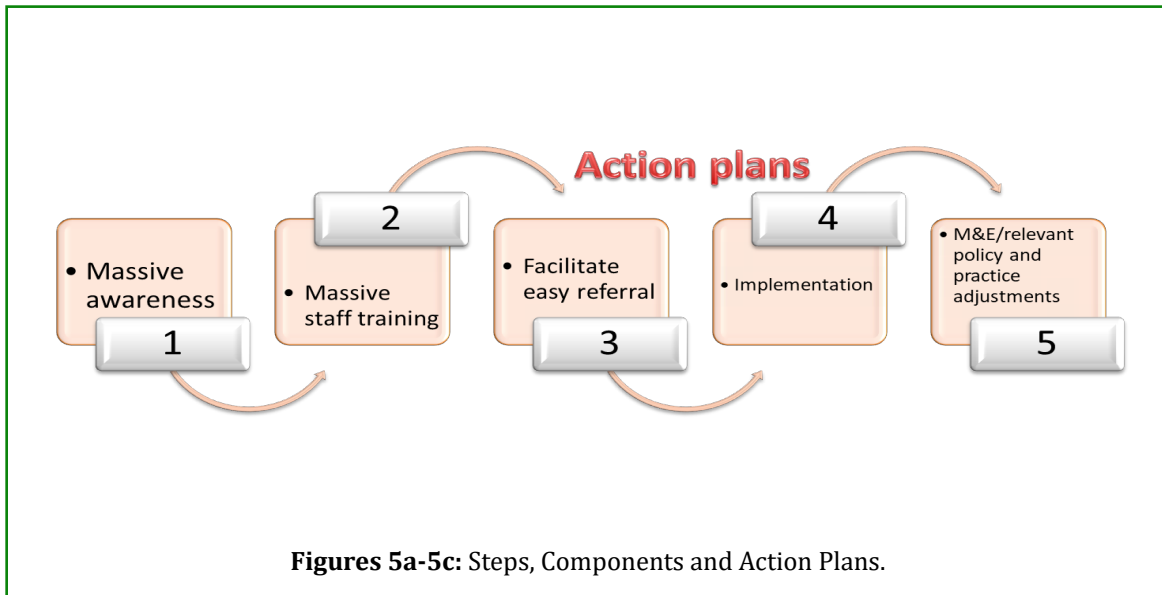
babies and mothers.

The Proposed Brebeu Project

The author therefore proposes a project tagged “The Better to Refer Babies Early in-Utero’ Project” (the BReBEU project). This could be implemented or replicated anywhere in a developing country.

The steps (Figure 5a) include; (1) Technical Team formation, (2) advocacy to /institutional permission from stakeholders; (3) community engagement (project ownership); (4) preliminary (retrospective) data collection and (5) intervention/ post intervention (prospective) data collection. The components (Figure 5b) of intervention will involve massive awareness creation, technical training and supportive supervision, post intervention (prospective) data collection, data analysis, interpretation and dissemination as well as phased / sustained up scaling and ongoing monitoring and evaluation.





This project should be addressed in a multimodal and multifaceted manner, and is to be implemented by tertiary (or secondary) health facilities. Firstly (Figure 5c) there should be massive awareness and up scaling on need to refer potential at-risk pregnancies early in-utero to spare mother, baby and family several hassles and negative outcomes Secondly, is the massive training of peripheral cluster facilities health staff, covered by a tertiary/secondary facility, on skills and knowledge that will enable them identify such pregnancies for early in-utero referral as well as the advantages of such intervention to patients, health facilities, governments and the general population Thirdly, the index tertiary/secondary facility should work with Governments, NGOs and the private sector to make referrals easy, smooth and cheap by addressing the logistics in the referral systems. Fourthly, supervision of implementation, monitoring and evaluation with ongoing training and retraining as well as relevant adjustment of policies should follow.

The suggested team composition should include paediatricians, obstetricians, nurses, public health physicians, public health nurses, community representatives, peripheral health facility representatives, state ministry of health, local government authorities, etc. It would require the collaboration of universities, corresponding teaching hospitals (Paediatricians and Obstetricians), data managers/epidemiologist, Government agencies, NGOs, CCBs, concerned communities and referring peripheral facilities. Additionally, there is need to ensure community ownership of the project. Funding sources could include donor agencies, governments, philanthropists, non-governmental organizations, institutions, Alumni/Diaspora organizations and professional associations/societies. The project could commence as a pilot using one tertiary facility and a cluster

of primary facilities and then escalated subsequently.

Conclusion

It is hoped that Organizations in Collaboration with their partners would pilot the 'Better to Refer Babies Early in-Utero (BReBEU) Project" and sell it to stakeholders for escalation in developing countries.

References

1. World Health Organization WHO Statistics (2006) Neonatal mortality rate (per 1 000 live births): 1-2.
2. Vitale A, Mandal A, Mandal PK (2016) Infant Mortality: A Leading Health Indicator. J Bioprocess Biotech 6: 291.
3. UNICEF, WHO (2012) Countdown to 2015 Maternal, Newborn & Child Survival Building a future for women and children 2012 Report, pp: 1-228.
4. Akinyemi JO, Bangboye EA, Ayeni O (2015) Trends in neonatal mortality in Nigeria and effects of bio-demographic and maternal characteristics. BMC Pediatrics 15: 36.
5. World Health Organization (2019) Global Health Observatory (GHO) data: Neonatal mortality.
6. Singh PK, Chudasama H (2020) Evaluating poverty alleviation strategies in a developing country. PLOS ONE 15(1): e0227176.
7. Liu Y, Amin A, Rasool SF, Zaman QU (2020) The Role of Agriculture and Foreign Remittances in Mitigating Rural

- Poverty: Empirical Evidence from Pakistan. Risk Manag Healthc Policy 13: 13-26.
8. Zaman SB, Hossain N (2017) Universal Health Coverage: A burning need for developing countries. J Med Res Innov 1: 18-20.
 9. McKee M, Balabanova D, Basu S, Ricciardi W, Stuckler D (2013) Universal Health Coverage: A Quest for All Countries But under Threat in Some. Value Health 16(1): S39-S45.
 10. Wagstaff A, Neelsen S (2019) a comprehensive assessment of universal health coverage in 111 countries: a retrospective observational study. The Lancet Glob Health 8(1): E39-E49.
 11. Scott S, Kendall L, Gomez P, Howie SRC, Zaman SMA, et al. (2017) Effect of maternal death on child survival in rural West Africa: 25 years of prospective surveillance data in The Gambia. PLoS ONE 12(2): e0172286.
 12. Girum T, Wasie A (2017) Correlates of maternal mortality in developing countries: an ecological study in 82 countries. Matern Health Neonatol Perinatal 3: 19.
 13. World Bank (2020) World development indicators.
 14. World Bank (2020) World development indicators. Neonatal mortality rate.
 15. Morakinyo OM, Fagbamigbe AF (2017) Neonatal, infant and under-five mortalities in Nigeria: An examination of trends and drivers (2003-2013). PLOS ONE 12: e0182990.
 16. UNICEF (2019) The State of the World's Children 2019: Children, Food and Nutrition - Growing Well in a Changing World, UN, New York.