

# MOBILE-BASED SOLUTIONS FOR REDUCING MATERNAL AND INFANT MORTALITY IN AFRICA: Lessons from Cameroon

*From the African Community of Practice on Managing for Development  
Results at the African Capacity Building Foundation*



Case Study  
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## SYNOPSIS

Malnutrition and infant mortality are major health problems in Africa. Giving birth or completing the first year of age for children is alarmingly risky. Despite the efforts of the Safe Motherhood Initiative (SMI) and efforts of governments and international partners in the framework of the Millennium Development Goals (MDGs), the maternal and infant mortality remains important. Thousands of women of reproductive age and children under five are still dying due to insufficient medical facilities, entrenched harmful traditional practices and management. This knowledge product presented an initiative of Alain Nteff, a youthful social entrepreneur from Cameroon who launched the Gifted Mom project in 2013. The product was elaborated using literature review and information from past interviews (Between 2013 and 2015) of Alain Nteff, and intend to showcase the initiative and inspire many other young people through the continent. The initiative of Alain Nteff is indeed original and is providing Cameroon and Nigeria with eight services with aim to get health information to the hands of pregnant women and new mothers. With the leadership of Alain Nteff, Gifted Mom impacted 6,700 women and newborns, won several prizes and partnered with important institutions for the development of the startup.

**Key findings:** Mobile penetration in Africa is increasing, improving the receptivity of African people and reducing distance gaps between rural and urban regions. This penetration is offering enormous opportunities for many actors especially in the health sector thereby helping to easily spread information, advice and/or assistance on maternal and infant care

**Main recommendations:** Mobile market presents significant opportunities for social entrepreneurship, hence the need for African countries to set up conducive environment. African talents must be recognized; there is the necessity for African leaders to adopt measures in favor of youth entrepreneurship

## 1. Introduction

Maternal mortality is the death of a woman while pregnant or within 42 days of termination of pregnancy, but excluding accidental or incidental causes (WHO, 1992). Infant mortality is the death of a child less than one year of age (CDC 2016). Both represent a major public health problem in Africa,

which has the highest maternal mortality and global infant mortality in the world (WHO, 2015).

In Sub-Saharan Africa (SSA), giving birth or completing the first year of age for children is especially risky due to the state of the health system and lack of skilled care. This is particularly evident in rural areas where the nearest hospital could be at

hours' walk from the villages. As a consequence, prenatal visits are rare. Some rural regions are also landlocked and it is difficult, if not possible for health agents to reach them for pregnancy monitoring, sensitization, vaccinations, etc. At present estimates, there is a need for urgent corrective measures to limit maternal and infant deaths as well as associated disabilities.

In line with the urgency mentioned above, Alain Nteff, a social entrepreneur decided to work on the issue and develop mobile-based solutions to connect mothers —especially the pregnant and the breastfeeding ones to health systems. Alain is 24 years old and specialized in informatics. In 2013, he launched “GiftedMom” ([www.giftedmom.org](http://www.giftedmom.org)), an application that sends messages to pregnant and breastfeeding women in order to remind them of their programs of monitoring and vaccination. The effect was beyond his expectations. GiftedMom became an impressive startup, proposing numerous services for connecting mothers and communities to health systems. Alain Nteff won several awards including the Anzisha Prize in 2014 (\$25,000) (Anisha Prize 2014) and the young African enterprise of New York Forum Africa in 2015 (€50,000) (NY-Forum Africa 2015). With his leadership, the startup “GiftedMom” won a contract with Nestle in 2015 (Jeune Afrique 2015). The impact of Alain's enterprise is real and meaningful.

This case study is intended to showcase the exceptional track record of Alain Nteff, a young social entrepreneur who used a mobile-based solution for reducing maternal and infant mortality in Africa. By publishing his experience, this case study will inspire many other young people on the continent, and lessons learned will guide them for their own personal ventures in social entrepreneurship.

## 2. The situation of maternal and infant mortality in Africa

Maternal and infant mortality is a major public health problem in Africa where the ratio is the highest in the world, estimated at 1,000 deaths per 100,000 live births (African Health Monitor, 2004). Africa accounts for the highest burden of mortality

among women and children in the world (Udofia and Okonofua, 2008; Prata et al., 2008).

According to the World Health Organization (2015), it is estimated that Africa contributes about 47 percent of global maternal mortality with SSA countries having the highest rates. In 2015, of the 830 daily maternal deaths, 550 occurred in SSA compared to 5 in developed countries (Ibid). The risk of a woman in a developing country dying from a maternal-related cause during her lifetime is about 33 times higher compared to a woman living in a developed country. Out of the 49 countries which record highest maternal deaths, 34 of these countries are in SSA, where one woman in 16 dies from pregnancy or childbirth compared to one in 2800 in the developing world (Amankwah, 2009). In 2008, six countries accounted for nearly half of global maternal mortality cases and three of them, Ethiopia, Nigeria and the Democratic Republic of Congo, are in Africa.

Given the close link between maternal and infant health, infant and child mortality rates in SSA are alarmingly high. According to the report of the Millennium Development Goals (UN, 2010), all 34 countries with under-five mortality rates exceeding 100 per 1,000 live births in 2008 are in SSA, except Afghanistan. The top five countries with the highest reported infant mortality rates are in SSA (Olusegun et al. 2012). Although Africa accounts for only 22% of births globally, half of the 10 million child deaths annually occur in the continent (Olusegun et al. 2012). One in seven children there died before their fifth birthday with the highest levels being in Western and Central Africa, where one in six children died before age five, equaling 169 deaths per 1,000 live births. Olusegun further highlights that 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 where between 257 and 270 children die for every 1000 live births (Olusegun et al. 2012).

Despite the efforts of the Safe Motherhood initiative (SMI) launched since 1987 and actions undertaken in the framework of the Millennium Development Goals (MDGs), the maternal and infant mortality remain important with thousands of women of reproductive age in Africa still dying due to a complication of pregnancy or child birth. This situation is due to insufficient medical facilities, entrenched harmful traditional practices and management failure despite the concerted efforts of international community over the past decades (Osireke and Odehen 2014).

Certainly, the maternal and infant mortality has decreased. However, the rate of improvement is still insufficient and at present estimates, if no urgent corrective measures are taken, million maternal and infants deaths and associated disabilities will hit the continent in the next decade.

Among some of the solutions provided, improving maternal health by providing basic support to pregnant women is the single most effective way to lower the staggeringly tragic infant and maternal death rates throughout SSA.

### 3. Methodology

The methodology used for data collecting includes literature review spanning different relevant websites and especially the website of the initiative ([www.giftedmom.org](http://www.giftedmom.org)), revisiting past interviews of Alain. Data analysis include cross-cutting of information, their structuration and the diagnostic of the observed results. The innovation was presented through a brief biography of Alain Nteff, the genesis of the initiative, its relevance and its outcomes. Important lessons have been drawn and some recommendations as policy implications were made.

### 4. A mobile-based solution for reducing maternal and infant mortality

#### *Who is Alain Nteff?*

Born in 1992 in Bamenda (Cameroon), Alain made his childhood in North-western Cameroon. After his

high school diploma in 2009, he went to Yaounde (Cameroon), where he studied computer sciences, mathematics and telecommunications. He graduated with a Bachelor in computer sciences and an engineering degree in ICT in 2012. After his graduation, he joined the team of Po LAB, an incubator based in Yaoundé, where he worked as coordinator for a year. He became the ambassador of Google partnered at the polytechnic college of Yaounde where he assisted students participating in the collaborative project of digitalization of the map of Cameroon for Google map. In 2013, he worked on an educative project which proposed educational video program for public transport. In 2014, he co-founded with Dr Conrad Tankou, Gifted Mom, an application that sends messages to pregnant and breastfeeding women in order to provide them with advices and to remind them of their programs of monitoring and vaccination.

Alain Nteff won several awards including the Anzisha Prize in 2014, the young African enterprise of New York Forum Africa in 2015, the Queen's Young Leaders Award in 2015, the Ashoka Changemakers and the D-Prize. He was nominated as one the 30 young promising entrepreneurs in Africa by the Magazine Forbes and was the young director at World economic forum.

#### *Where did the idea of Gifted Mom come from?*

Alain Nteff realized the alarming situation of maternal and infant mortality when he visited his friend Dr Conrad Tankou. The latter explained to Alain Nteff that “Seventeen infants died of malaria, syphilis or chlamydia infection in a week. These infections could be avoided with prevention systems”. Given this situation, Alain Nteff decided to drop off these statistics.

#### *What is Gifted Mom and what is the solution provided?*

GiftedMom (<http://www.giftedmom.org>) is a leading mobile health solutions provider in Africa. It leverages last mile technologies to provide pregnant women and new mothers access to health

information and strengthen linkages to antenatal care.

This opportunity is fully exploited by Gifted Mom which based all their eight provided services on mobile phone. These services are: Follow up of pregnant women; Antenatal care SMS notification; Tracking the vaccination program of children; Teen health/Sex education; Family planning and contraception; Outreach education campaign; Real time monitoring using Google fusion table and Mobilizing community and health workers (Figure1).

*Our vision: "A world free of maternal and infant deaths"*  
Said Gifted Mom

expected to increase from 52 percent in 2012 to 79 percent in 2020 (Frost and Sullivan 2014), representing 800 Million people which will have a phone subscription. Frost and Sullivan's analysis indicates that SSA's mobile market presents significant opportunities for telecommunication companies, device and module vendors, and application providers. This represents an opportunity for Gifted Mom to extend its services and to reach more and more mom across Africa. However, important constraints remain and these include the high rate of illiteracy and the low access to electricity. Indeed in SAA more than one in three adults cannot read (UNESCO 2014), representing 182 million adults who are unable to read and write (UNESCO 2013). Furthermore, nine out of 10 people do not have access to electricity in rural areas (Van der Hoeven 2013). In these contexts, the impact of

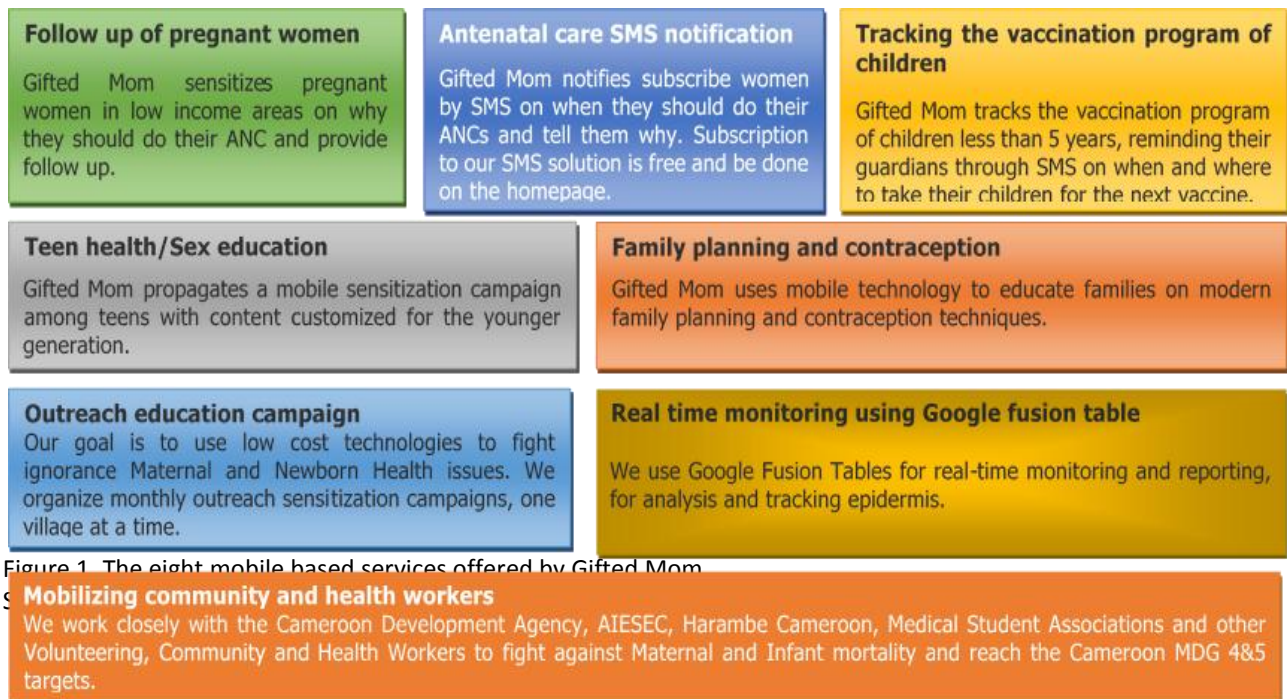


Figure 1. The eight mobile-based services offered by Gifted Mom

Gifted Mom could be limited.

### **Opportunities, Constraints and Challenges**

Gifted Mom has taken advantages of the high mobile penetration in Africa. Indeed the mobile penetration in Africa and especially in SSA is one of the fastest growing fields in the mobile technology world. It is

### **5. Outcomes and overall assessment**

After years of actions, important outcomes have been achieved and these include those briefly discussed in the following paragraphs.

→ ***Thousands of pregnant women and newborns were impacted***

At the end of the first year (2014), an estimated 2,100 women had been impacted. After two years of actions, more than 6,700 pregnant and newborns were registered in the different services. Alain Nteff would like to extend the Gifted Mom services to thousands other women and is expected to impact five million women by 2017. Furthermore, about 330,000 SMS were sent to women.

→ ***The offered services by Gifted Mom have increased.***

Gifted Mom has greatly increased its services and at present provide communities with a panel of eight services namely: Follow up of pregnant women; Antenatal care SMS notification; Tracking the vaccination program of children; Teen health/Sex education; Family planning and contraception; Outreach education campaign; Real time monitoring using Google fusion table and Mobilizing community and health workers. From a simple application, Gifted Mom moves from an application to a platform which provide mobile-based solutions for maternal and community engagement.

→ ***Gifted Mom grows out of Cameroon.***

Gifted Mom services are now available both in Cameroon and Nigeria with an expectation to extend gradually towards African countries.

→ ***More jobs are created.***

From two co-founders, Gifted Mon is currently employing 13 full administrative and technical jobs. All of them are young.

→ ***Gifted Mom mobilized community health workers.***

Gifted Mom developed a special mobile solution to engage community health workers to fight against maternal and infant mortality. About 520 community health workers have been engaged apart from medical students and volunteers.

→ ***Recognition, partners and investors are increasing.***

Gifted Mom obtained the recognition from international institutions and five awards have been

won by its founder (the Africa-start up award, Anzishar prize, Ashoka changemakers, D-prize, the queen's young leaders). Gifted Mom has also partnered with many others for extending the initiative. Gifted Mom partnered with The Partnership for Maternal, Newborn and Child Health, the Mobile Alliance for Maternal Action, The MasterCard Foundation, the Women Deliver, the ALN Ventures. Recently, GiftedMom won a contract with Nestle.

## **6. Lessons learned and policy implications**

From the initiative of Alain Nteff, key lessons could be learned and that may lead to the development of appropriate policies in the health care and telecommunications sectors.

→ ***Mobile market presents significant opportunities for social entrepreneurship, hence the need for African countries to set up conducive environment.***

It is now accepted that the mobile penetration in Africa is increasing, improving the receptivity of African people and reducing distance gaps between rural and urban regions. This penetration is offering enormous opportunities for many actors in different fields (agriculture, health, education etc.) to spread easily information, advices and/or assistance. However, to take advantages on these opportunities, there are some conditions. Firstly, there is a need to improve access to electricity. This is possible by boosting investments in energy sector and developing appropriate initiatives to facilitate the subscription for poor household. Secondly, there is a need to reduce the important illiteracy rate in Africa. Government should invest more on education and take initiative likely to improve the enrollment rate and reducing the school dropout. The free school fees initiative experimented in Benin is an example.

→ ***Brain drain could be reduced if there is a conducive business climate for young graduates from African universities.***

For most African young people, Europe and the United States of America are the best destination for

studies and entrepreneurship. This thought is the main reason of brain drain of African talents. Alain Nteff is the proof that African young people could graduate from African universities and become the best young entrepreneurs in the world. He stayed in his country and contributes to fix social problems. Certainly, important actions should be taken to retain young talents in Africa. For instance, governments should create a good business environment to assure security to private investors. Additionally some facilities (financing, assurance, etc.) should be given to young entrepreneurs to incite them to engage in social entrepreneurship venture.

→ *The efforts of African talents are not usually recognized, hence the necessity for African leaders to create the framework for awarding young talents on the continent.*

Among all the five awards won by Alain Nteff, none was from African institution. African talents are usually neglected by African institutions but intensively assisted by western funds, foundations and initiatives. This could be a reason explaining the ongoing huge brain drain of Africa talents. At national level as well as at continental level, institutions should create some prizes to recognize annually efforts of African talents.

Against this background, the African Community of Practice (AfCoP) launched in March 2016 a continental online discussion on brain drain in Africa in order to raise attention of its impact on Africa's economic development. Globally, information from these discussions as well as those from knowledge products (Guidelines, tools, etc.) are used to propose effective capacity building strategies for African governments.

## References

- Amankwah AA (2009). Ghana: MDGs Coalition Strive to Improve Maternal Health. This Day. [allafrica.com](http://allafrica.com). Retrieved on 07/04/2010.
- CDC 2016. Infant mortality. Maternal and Infant Health, Division of Reproductive Health, National Center for Chronic Disease Prevention and Health Promotion. Accessed on 29/03/2016
- Frost and Sullivan 2014. Sub-Saharan African Mobile End-user Trends: Mobile Phones are Moving Beyond Communication Tools to Service Delivery Platforms. <http://www.marketresearch.com/product/sample-8296850.pdf>
- Olusegun, O. L., Ibe, R. T., & Micheal, I. M. (2012). Curbing maternal and child mortality: The Nigerian experience. *International Journal of Nursing and Midwifery*, 4(3), 33-39.
- Osirike, A. B., & Idehen, O. F. (2014). Spatial and disaggregated patterns of infant mortality in Benin City. *Journal of Research in National Development*, 11(1), 34-39.
- Prata N, Gessesew A, Abaha AK, Holston M, Potts M (2008). Prevention of Post Partum Haemorrhage: Option for Home Births in Rural Ethiopia. *Afr. J. Reprod. Health*, 13(2): 87-95.
- Udofia I, Okonofua F (2008) preventing primary post partum hemorrhage in unskilled births in Africa. *Afr. J. Reprod. Health*, 12(1): 7-9.
- United Nations 2010. Millenium Development Goals Report: 2010. 2010: UN. Eds United Nations Publications, ISBN 9210542959, 9789210542951; p75
- UNESCO Institute for Statistics. "Adult and Youth Literacy" UIS Fact Sheet. September 2014.
- UNESCO Institute for Statistics. Adult and Youth Literacy: National, Regional and Global Trends, 1985-2015. June 2013.
- Van der Hoeven, M. (2013). World Energy Outlook 2013. International Energy Agency: Tokyo, Japan. <https://eneken.ieej.or.jp/data/5280.pdf>
- World Health Organization, 1992. International classification of Disease, 10th revision, WHO, Geneva, 1992
- World Health Organization, 2015. Trends in Maternal Mortality: 1990 to 2015 Estimates by WHO, UNICEF, UNFPA, World Bank Group and the United Nations Population Division
- Anisha Prize 2014. Fellows: Alain Nteff. <http://www.anzishaprize.org/fellows/nteff-alain/> (Accessed on 29/03/2016)
- New York forum Institute 2015. Le prix de la jeune entreprise africaine. <http://www.ny-forum-africa.com/fr/african-start-up-award>
- Jeune Afrique 2015. Alain Nteff, star camerounaise de Davos, <http://www.jeuneafrique.com/3450/economie/ala-in-nteff-star-camerounaise-de-davos/>



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